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BIBLIOGRAPHY

LLU TRANSLATIONS BULLETIN. Sep 59, 75p.
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New translations of Russian scientific and technical literature, recent additions to the Lending Library Unit loan collection of 15,000 individual translations and the translating activities of official and commercial organizations are regularly noted in the LLU TRANSLATIONS BULLETIN. In addition each issue includes several complete translations of Russian papers on such important topics as automation, education, machine translation, scientific research and new developments in China.

SOVIET SCIENCE AND TECHNOLOGY, 1959, VOL. 3, NO. 2. A monthly guide to Soviet research. Apr 59.
Order from CB $25.00/year

English table of contents of 1958-1959 issues of all Soviet journals being translated into English on a continuing basis.

SOVIET SCIENCE AND TECHNOLOGY, 1959, VOL. 3, NOS. 5-6. A monthly guide to Soviet research. July-Aug 59, 2 nos.
Order from CB $25.00/year

v. 3, no. 5, July 59, 62p.
v. 3, no. 6, Aug 59, 66p.

English table of contents of 1958 and 1959 issues of all Soviet journals being translated into English on a continuing basis.

Library of Congress, Washington, D. C.
EAST EUROPEAN ACCESSIONS INDEX. Sep 59, 275p.
Order from GPO $10.00/year

Designed to serve the English-speaking user, this index lists post World War II publications received by the Library of Congress and over 100 major American research libraries from Albania, Bulgaria, Czechoslovakia, Estonia, Hungary, Latvia, Lithuania, Poland, Rumania, and Yugoslavia in all fields of knowledge. Arrangement in the first part is by country and within each country by 17 subject classes. In addition to the entry in the original language, a translation of the title or a descriptive annotation in English is given for each monograph and periodical, with the tables of contents translated into English for selected periodicals. The second part, comprising approximately two-thirds of the Index, consists of a subject index to all articles appearing in periodicals for which the tables of contents are translated and to all monographs listed.

AGRICULTURE

Blagoveshchenskaya, N. M., Zarubina, L. V. and Mogilevskaya, E. F.
DIAGNOSIS OF SWINE LEPTOSPIROSIS (K Diagnostike Leptospirosa Sviney) [1959] [2]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17292

Trans. of Veterinariya (USSR) 1957, v. 34, no. 5, p. 26-27.

Plant Cultivation

Agafonov, I. B. and Agafonov, S. B.
UNIVERSAL TRAILER SNOW-PLOUGH (Universal'niy Pritsepnoy Snegopakh). Jan 58 [4]p. C. T. S. no. 423.
Order from LC or SLA mi$1.80, ph$1.80 59-18533

Trans. of Sel'khozmashina (USSR) 1956, no. 11, p. 103.

The desire to retain the snow in the fields and control the spring thaw led to the design of a snow plough "wall maker" which is capable of: creating barrier walls, redistributing snow so that the spring thaw is controlled, and clearing of snowdrifts from roads and farmsteads. Without the use of additional parts, the machine can be converted from "wall-maker" into plough in 30 to 40 minutes, by merely rearranging the connecting members.

Florentsev, E. I.
A CHAIN CUTTER FOR A TOBACCO HARVESTING MACHINE. [1959] [9]p. (1 fig. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-17001

Trans. of Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Tabak i Makhorki. Byulleten' Nauchno-Tekhnicheskoy Informatsii (USSR) 1958, no. 4, p. 51-56.

Litvinenko, S. N.
HIGHLY ACTIVE GROWTH STIMULANT (Vysokoaktivnyy Rostovyy Stimulyator). [1959] 3p. (1 fig. omitted). Trans. A-1018.
Order from LC or SLA mi$1.80, ph$1.80 59-16813

Trans. of Akadem[iya] Nauk SSSR. Vestnik, 1959, v. 29, no. 1, p. 81-82.

Mashkovtsev, M. F. and Mikoyan, A. J.
SELF-MOISTENING AND MOISTURE CONTROL OF TOBACCO DURING ITS FERMENTATION AND STORAGE. [1959] 7p.
Order from SLA mi$1.80, ph$1.80 59-17799

Trans. of Bulgar[ski] Tyutyun, 1958, v. 3, no. 2 p. 70-73

Menne, August.
PROCESS OF PLANT PEST CONTROL, tr. by J. C. Levy. 17 Feb 59, 4p.
Order from LC or SLA mi$1.80, ph$1.80 59-14202

Trans. of Austrian patent 163,215, Class 45g; applied for 12 Mar 46, beginning of patent term 15 Oct 48, pub. 10 June 49. [Date of filing application regarded as 19 June 42 (date of filing in German Patent Office)].

The process is characterized in that aniline dyestuffs in the solid form, for example of the type of leads for commercial indelible pencils, are introduced into the sap stream, so that portions of the agent are dissolved in the sap over a long period of time and are carried by the latter to the remaining parts of the plant.

Muige, S. G.
CO-OPERATION OF PHYTOHELMINTHS AND LOWER FUNGI IN PLANTS (Vzaymodeystviye Fitogel'mintov i Nizshikh Gribov v Rasteniyakh). [1959] 5p. Trans. A-1012.
Order from LC or SLA mi$1.80, ph$1.80 59-16808

Trans. of Zashchita Rastenii ot Vreditelej i Bolezney (USSR) 1959, v. 4, no. 1, p. 34-35.

Petrov, E. G.
THE ENGINEERING OF IRRIGATION IN GOLODNAYA STEPPE (Tekhnika Orosheniya v Golodnoy Stepi). [1959] [38]p. (foreign text included).
Order from LC or SLA mi$3.00, ph$6.30 59-17388

Trans. of Vestnik Irrigatsii (USSR) 1930 [v. 8] no. 1, p. 74-86.

ASTRONOMY

Shcheglov, V. P.
TASHKENT ASTRONOMICAL OBSERVATORY. 22 July 59, 5p. (11 figs. omitted) JPRS: L-879-N.
Order from OTS $0.50 59-13729

Trans. of mono. Tashkentskaya Astronomicheskaya Observatoriya, Moscow, 1958, p. 3-18.

The buildings and instruments of the observatory are described.

Astrophysics

*ASTRONOMICHESKIY ZHURNAL (USSR) 1958 VOL. 35, NO. 4. P. 513-680 (Astronomical Journal). [1959] 1v. [SOV]-33-35-4-(1-25)/25.
Order from OTS $0.70, $4.00/year PB 141 028T-4
Foreign $0.95, $5.50/year

Consists of abstracts in English.

AURORA AND AIRGLOW. 6 May 59, 10p. (4 figs. omitted) 13 refs. JPRS: 699-D.
Order from OTS $0.50 59-11543

Consists of selected translations from Soviet-bloc International Geophysical Year literature.

METEOR STUDIES. 9 May 59, 19p. (6 figs. omitted) 33 refs. JPRS 710-D.
Order from OTS $0.50 59-11544

Consists of selected translations from Soviet-bloc International Geophysical Year literature.

Contents:
Velocity of sporadic meteors in January 1958, by B. Kashcheyev
Radar observations of sporadic meteors during January-February 1958, by B. Kashcheyev and D. Luk'yashko
On the activity of certain meteor radiants in 1957, by I. Kupo
VII Plenum of the Commission on Comets and Meteors of the Astronomical Council, Academy of Sciences USSR, by V. A. Bronshten and I. T. Zotkin
Simferopol' Meteor Station imeni G. O. Zateyshchikov, by V. V. Martynenko and B. L. Gol'dberg
Resolution of the meteor seminar in Odessa (August 1956)

Getmantsev, G. G., Ginzburg, V. L. and Shklovskiy, I. S.
RADIOASTRONOMICAL RESEARCH BY MEANS OF ARTIFICIAL EARTH SATELLITES. 22 May 59, 6p. 11 refs. JPRS: 730-D.
Order from OTS $0.50 59-11550

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1958, v. 65, no. 2, p. 157-161.
Another translation is available from LC or SLA, mi$1.80, ph$1.80 as 59-12735, 5 Jan 59, 6p.

The apparatus proposed for installation in a satellite is a lightweight superheterodyne receiver having a signal-transfer coefficient with power of the order of 0.1 and ferrite antennas with a radiation resistance of 20 to 30 ohms. The device would yield determinations of electron concentration in the ionosphere.

Poloskov, S. M.
CONFERENCE ON PHYSICS OF CORPUSCULAR STREAMS EMANATING FROM THE SUN AND ON STUDY OF THEIR EFFECT UPON THE UPPER ATMOSPHERE AND MAGNETIC FIELD OF THE EARTH (Soveshchaniye po Fizike Korpuskulyarnykh Potokov, Iskhodyashchykh ot Solntsa i Izucheniye ikh Vozdeystviya na Verkhnyuyu Atmosferu i Magnitnoye Pole Zemli). [1959] [12]p. F-TS-9766/III.
Order from LC or SLA mi$2.40, ph$3.30 59-16075

Trans. of [Voprosy Kosmogonii] (USSR) 1957, v. 5, p. 291-296.

Skobel'tsyn, D. V.
ON LIMITING EXTENSIVE ATMOSPHERIC SHOWERS OF COSMIC RADIATION, tr. by J. B. Sykes. 1955 [9]p. 12 refs. A. E. R. E. Lib/Trans. 597.
Order from SLA mi$1.80, ph$1.80 59-17453

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 67, no. 1, p. 45-48.

Coincidence events previously recorded by G. T. Zatsepin and V. V. Miller (Zhur. Eksptl. i Teoret. Fiz. 17: 939, 1947) at a height of 3860 m in counters up to 1000 m apart are compared with calculated absolute values of C_4 (the number of fourfold coincidences per hour). (See also 59-17457)

Skobel'tsyn, D. V.
ON THE COURSE OF THE "CORRELATION CURVE" FOR AUGER SHOWERS AT LARGE DISTANCES, tr. by J. B. Sykes. 1955 [8]p. 4 refs. A. E. R. E. Lib/Trans. 598.
Order from SLA mi$1.80, ph$1.80 59-17457

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 67, no. 2, p. 255-258.

A method is given whereby comparisons, such as those made previously (59-17453) between calculation and experiment, can be made so that the result does not depend on complex calculations of shower theory but rests only on general and certain postulates of the theory.

BIOLOGICAL SCIENCES

Sederl, Julius.
REPAIR OF THE PROLAPSE OF THE BLIND ENDING VAGINA. (REPAIR OF THE VAGINAL PROLAPSE AFTER TOTAL HYSTERECTOMY) (Zur Operation des Prolapses der Blind Endigenden Scheide). Aug 59, 2p.
Order from SLA mi$1.80, ph$1.80 59-17591

Summary trans. of Geburtshilfe und Frauenheilkunde (West Germany) 1958, v. 18 [no. 6] p. 824-828.

Anatomy and Physiology

Chao, I-ping.
PRESENT STATUS AND FUTURE OF CHINA'S RESEARCH IN PHYSIOLOGY. 10 June 59, 12p. JPRS: L-1133-D.
Order from OTS $0.50 59-11318

Trans. of Sheng-li K'o-hsueh Chin-chan (Chinese People's Republic) 1957, v. 1, no. 1, p. 1-9.

Report presented to the China Physiology Society conference of 1956. The primary problem is one of personnel. The burden of research in physiology rests on less than 50 investigators associated with the Physiological and Biochemical Institute of the Chinese Academy of Science, or with the Physiology Laboratory of the Central Research Institute of Health (Scientific Institute of Medicine). The need for information on the status of physiological research in other countries is stressed.

Chernigovskiy, V. N.
MORPHOLOGICAL STRUCTURE OF INTEROCEPTIVE ANALYZER AND CERTAIN PECULIARITIES OF ITS WORK. 12 Aug 59, 18p. (9 figs. omitted). JPRS: L 889-N.
Order from OTS $0.50 59-13772

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1959 [v. 14] no. 4, p. 3-18.

Kostyuk, P. G.
ELECTRICAL MANIFESTATIONS OF RECIPROCAL EXCITATION AND INHIBITION IN INDIVIDUAL INTERMEDIATE NEURONS, tr. by P. V. DePorte. 13 July 59, 91. (3 figs. omitted) 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-18232

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 120, no. 1, p. 219-222.

Kostyuk, P. G.
ELECTRICAL MANIFESTATIONS OF RECIPROCAL EXCITATION AND INHIBITION IN INDIVIDUAL MOTONEURONS, tr. by P. V. DePorte. 10 July 59, 10p. (3 figs. omitted) 13 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-18231

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 119, no. 6, p. 1225-1258.

Revutskaya, P. S.
AMITOTIC REPRODUCTION OF NEUTROPHILS IN ASCITIC AND PLEURAL FLUIDS (Ob Amitoticheskom Razmnozhenii Neytrofilov v Astsiticheskoy i Plevral'noy Zhidkosti). 28 Mar 54, 7p. (2 figs. omitted) 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17860

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 85, no. 3, p. 641-644.

Rüdiger, W.
STUDIES ON THE PASSAGE OF AIR THROUGH THE NOSE WITH THE USE OF A NEW VASOCONSTRICTING DRUG (CIBA 11391) (Untersuchungen über die Luftdurchgängigkeit der Nase unter Anwendung eines Neuen Gefässverengenden Mittels (Ciba 11391). [1958] 10p. (5 figs. omitted) 12 refs.
Order from SLA mi$1.80, ph$1.80 59-10838

Trans. of Hals- Nasen- [und] Ohrenarzt (Germany) 1958, v. 7, p. 77-80.

Shlygin, G. K.
ON THE SPECIFIC FERMENTATIVE ADAPTABILITY OF THE ALIMENTARY TRACT (O Spetsificheskoy Fermentnoy Prisposoblyayemosti Pishchevaritel'nogo Trakta). July 59 [12]p. 88 refs.
RTS no. 1034.
Order from LC or SLA mi$2.40, ph$3.30 59-18854

Trans. of Voprosy Pitaniya (USSR) 1958, v. 17, no. 2, p. 3-14.

Shtern, L. S.
THE PRESENT STATUS OF THE PROBLEM OF THE HEMATO-ENCEPHALITIC BARRIER. [1959] [38]p. 47 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-17375

Trans. of Uspekhi Sovr[emennoy] Biol[ogii] (USSR) 1958, v. 45, no. 3, p. 328-348.

Trofimov, L. G. and Mokhova, T. M.
PROGRESS IN BRAIN STUDIES. [1959] 14p. 2 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17378

Trans. of Akad[emiya] Med[itsinskikh] Nauk SSSR. Vestnik, 1958 [v. 13] no. 1, p. 12-18.

Investigations by Soviet scientists in the field of the histochemistry, morphology and function of the brain are surveyed.

Vyazov, O. Ye. and Volkova, L. S.
CERTAIN QUESTIONS OF IMMUNOLOGY OF EMBRYOGENESIS. 5 Mar 59, 19p. (6 figs. omitted) 64 refs. JPRS: L-668-N.
Order from OTS $0.50 59-13243

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1958, v. 13, no. 11, p. 30-41.

As a result of an analysis of the tissues of the crystalline lens (duck) and heart (chicken) in embryogenesis, it was possible to establish the fact that at least 3 basic groups of antigens can be distinguished in the growing tissues of animals: 1) "species-specific" antigens present at all stages of development, 2) "tissue-specific" antigens which occur at definite stages of development and which are present at all subsequent stages, and 3) antigens which are present only at definite stages of development. The study of the antigenic properties of growing tissues makes it possible to indicate the direction to be followed in developing methods of induced abortion which would be harmless to the female organism, and for developing biological means of contraception.

[Z]ayko, N. N.
ON THE BARRIER FUNCTIONS OF THE ORGANISM. [1959] [25]p. 28 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-17366

Trans. of Akad[emiya] Nauk SSSR. Izv[estiya]. Ser[iya] Biol[ogicheskaya] [1958] no. 6, p. 698-711.

This paper relates primarily to the hemato-encephalic barrier.

Biochemistry

Boyens, Helga.
THE HYALURONIC ACID-HYALURONIDASE SYSTEM; EXPERIENCES FROM THE CLINICAL USE OF HYALURONIDASE IN INFUSIONS (Das Hyaluronsäure Hyaluronidase-System; Erfahrungen über die Klinische Hyaluronidase-Anwendung bei Infusionen). [1959] [15]p. (11 figs. omitted) 1 ref.
Order from SLA mi$2.40, ph$3.30 59-17880

Trans. of Therapie der Gegenwart (Germany) 1950, no. 6 [p. 169-177].

Bronovitskaya, Z. G. and Shapovalova, N. S.
THE GLUCOSE AND GLYCOGEN OF THE BRAIN IN ANIMALS UNDER RAISED OXYGEN PRESSURE. [1959] [8]p. 14 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17418

Trans. of [Ukrayins'kyy Biokhimichnyy Zhurnal] (USSR) [1957, v. 29, p. 20-24].

Ivanov, V. I. and Rosenberg, P. A.
CHANGES IN THE CONTENT OF PHOSPHORUS COMPOUNDS IN BRAIN AND MUSCLE OF ANIMALS POISONED WITH CERTAIN ORGANIC SOLVENTS. [1959] [10]p. 17 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17808

Trans. of Voprosy Meditsinskoy Khimii (USSR) 1958, v. 4, p. 274-279.

The brain and muscle of mice poisoned with methanol, ethylene glycol, carbon disulfide or benzene were examined to determine phosphocreatine and adenosintriphosphorus acid content. An increase of these substances was observed during the first hour of intoxication: a decrease usually accompanied recovery from the state of acute intoxication. By using tagged phosphorus it was established that phosphorus metabolism increased somewhat in the brain during the first hour. Specific activity of tagged phosphorus decreased in the muscles: the increased content of phosphocreatine and adenosintriphosphorus acid in the muscles was connected with a lowered requirement of compounds rich in energy, rather than with a rapid synthesis.

Khaykina, B. I. and Krachko, L. S.
EXTRACTION AND FRACTIONATION OF GLYCOGEN FROM BRAIN TISSUE. [1959] [15]p. 31 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17417

Trans. of Ukr[ayins'kyy] Biokh[imichnyy] Zh[urnal] (USSR) 1957, v. 29, p. 10-19.

Konyukhov, B. V.
CHANGES IN THE ANTIGENIC PROPERTIES OF ANIMAL TISSUES IN ONTOGENESIS. 16 July 59, 27p. 117 refs. JPRS: L-1759-D.
Order from OTS $0.75 59-11691

Trans. of Uspekhi Sovremennoy Biologii (USSR) 1958, v. 45, no. 1, p. 97-113.

Krasilnikova, V. I.
HISTOCHEMISTRY OF PHOSPHATASES IN RABBITS' BRAINS DURING ONTOGENESIS. [1959] [7]p. 12 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17367

Trans. of Arkh[iv] Anat[omii, Gistologii i Embriologii] (USSR) 1958 [v. 35] no. 3, p. 69-72.

Kravchinskiy, E. M. and Silich, T. P.
A STUDY OF CERTAIN PECULIARITIES OF PROTEIN METABOLISM IN THE GRAY AND WHITE MATTER OF THE BRAIN IN CATS. [1959] [17]p. 19 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17436

Trans. of [Ukrayins'kyy Biokhimichnyy Zhurnal (USSR) 1957, v. 29, p. 25-31].

Martinson [E. E., Tyakhepyl'd] L. [Ya.] and others.
THE EFFECTS OF PROLONGED INHIBITION, CAUSED BY ARTIFICIAL DRUG-INDUCED SLEEP, ON CARBOHYDRATE METABOLISM, RESPIRATION AND THE SYNTHESIS OF ADENOSINETRIPHOSPHATE IN THE BRAIN. [1959] [11]p. 10 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17432

Trans. of Voprosy Med[itsinskoy] Khim[ii] (USSR) 1956, v. 2, no. 6, p. 443-449.

The rapid return to normal of the biochemical status of the brain (which had been impaired during prolonged artificial sleep) after cessation of the administration of soporifics indicates that these changes are connected with changes in the functional state of the brain. Inhibition induced by a prolonged administration of soporifics causes biochemical changes which indicate that artificial inhibition differs from physiological inhibition. This difference mainly is noticeable in the depression of the restitution of energetically significant substances which in its turn may depress the curative restitutional effect of artificial sleep. The use of ascorbic acid may be recommended to correct these negative changes in brain metabolism.

Palladin, A. V., Polyakova, N. M., and Gotovtseva, E. P.
ON THE EFFECT OF STARVATION ON BRAIN PROTEINS. [1959] [13]p. 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17434

Trans. of Ukrayin[s'kyy] Biokhim[ichnyy] Zh[urnal] (USSR) 1958, v. 30, no. 3, p. 323-331.

To study the effect of starvation on the metabolism of soluble and insoluble proteins of the brain, an investigation was conducted on the intensity of incorporation of methionine labelled by radio-active sulphur in the soluble and insoluble brain proteins of normal and starved rabbits, the experiments being carried out on both young and adult rabbits. In young starving rabbits the incorporation rate decreases; while in starving adult rabbits no change in the incorporation rate could be observed as compared with that of the control group.

Palladin, O. V.
APPLICATION OF RADIOACTIVE ISOTOPES FOR RESEARCH IN THE AREA OF FUNCTIONAL BIOCHEMISTRY OF THE BRAIN. [1959] 16p.
Order from LC or SLA mi$2.40, ph$3.30 59-17734

Trans. of Akad[emiya] Nauk URSR [Kiev]. Visnyk, 1956 [v. 27] p. 3-11.

Pertseva, M. N.
THE CONTENT OF AMMONIA AND GLUTAMINE IN THE BRAIN TISSUES IN ITS ANEMIA CAUSED BY LIGATURE OF CAROTID ARTERIES. [1959] [10]p. 12 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17377

Trans. of *Byull[eten'] Eksp[erimental'noy] Biol[ogii i] Med[itsiny] (USSR) 1958, [v. 46] no. 7, p. 63-67.

Experimental work, using rats, on the effect of anoxia upon nitrogen metabolism in the brain is reported.

Sadikova, N. V. and Skvortsevich, V. A.
RADIOACTIVE PRODUCTS OF GLYCINE -1-C^{14} CONVERSION IN THE BRAIN TISSUE OF RATS. [1959] [10]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17431

Trans. of Voprosy Med[itsinskoy] Khimii (USSR) 1956, v. 2, no. 2, p. 128-132.

In experiments with subcutaneous injection of glycine-1-C^{14} solution into rats while in a state of comparative rest, the radioactivity of protein substances in the brain was considerable, indicating the existence of amino acids containing tagged carbon of the carboxyl group of glycine in the proteins of the brain tissue. Chromatographic analysis with the use of tagged compounds made it possible to discover in the non-protein part of the brain tissue the presence of several tagged amino acids in addition to active glycine, i. e. radioactive serine, cystene and dicarboxylic amino acids.

Scheer, K.
CONCERNING LIPASE IN THE SALIVA (Über Lipase im Speichel). [1959] [12]p. [1 fig. omitted] 6 refs.
Order from SLA mi$2.40, ph$3.30 59-17215

Trans. of Klinische Wochenschrift (Germany) 1928 [v. 7, no. 4] p. 163-165.

Trusov, V. I.
PHOSPHATIDES. [1959] [33]p. 174 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-17376

Trans. of Uspekhi Sovremennoy Biologii (USSR) 1958, v. 45, no. 1 [p. 28-45].

The status of knowledge of the chemistry and metabolism of phosphatides is reviewed. The bibliography upon which thearticle is based includes 17 Soviet references: the rest of the bibliography is predominantly English-language or German.

Vladimirova, E. A.
DESCRIPTION OF A CHAMBER DESIGNED FOR BIOCHEMICAL STUDY OF RATS' BRAINS DURING CONDITIONED REFLEX MOTOR-ALIMENTARY AND MOTOR-DEFENSIVE REACTIONS. [1959] [7]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17428

Trans. of Voprosy Med[itsinskoy] Khimii (USSR) 1956, v. 2, no. 3, p. 229-233.

Yakovlev, N. N.
DYNAMICS OF LABILE PHOSPHORUS COMPOUNDS IN THE BRAIN DURING MUSCULAR ACTIVITY OF VARYING DURATION. [1959] [17]p. 31 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17433

Trans. of Voprosy Med[itsinskoy] Khimii (USSR) 1956 [v. 2] no. 2, p. 140-149.

Botany

Keng, Po-chieh.
BOTANICAL GEOGRAPHY OF CHINA BY REGIONS. 27 July 59, 135p. 40 refs. JPRS: 1790-N.
Order from OTS $2.75 59-13731

Trans. of mono. Chung-kuo Chih-wu Ti-li Ch'u-yu, Shanghai, 1958, p. 1-128.

These lectures were written for use as reference material by the departments of biology, geography and meteorology of comprehensive and normal colleges as well as in colleges of agriculture and forestry and middle schools. The work is a comprehensive study of research engaged in by the botanical geographers of China during the past twenty to thirty years.

Mikhlin, D. M. and Mutuskin, A. A.
NON-MITOCHONDRIAL OXIDATION OF REDUCED DIPHOSPHOPYRIDINE NUCLEOTIDE IN THE ROOT OF A PLANT. [1959] 4p.
Order from ATS $5.00 ATS-44L32R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 125, no. 4, p. 925-927.

Rozenfel'd, Ye. L., Poznanskaya, A. A., and Rudakova, N. K.
A STUDY OF THE COMPOSITION AND PROPERTIES OF ZYMOSAN. [1959] 4p.
Order from ATS $5.00 ATS-45L32R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 125, no. 4, p. 928-930.

Tageyeva, S. V. and Brandt, A. B.
UNIVERSAL APPARATUS FOR DETERMINATION OF THE OPTICAL PROPERTIES OF PLANTS. [1959] [9]p. 27 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17781

Trans. of *Biofizika (USSR) 1959, v. 4, p. 232-237.

A new apparatus is described which has been installed in the photobiological laboratory of the Institute of Biological Physics of the Academy of Sciences SSSR. The apparatus permits the study of the absorption, transmission, and reflection of monochromatic light by living plant leaves.

Microbiology

Kovalenko, Ya. R.
PRESERVATION AND VEGETATION OF THE PATHOGEN OF EMPHYSEMATOUS CARBUNCLE IN THE SOIL (Sokhranyayemost' i Vegetatsiya Vozbuditelya Emfizematoznogo Karbunkula v Pochve). 7 Apr 59, 17p. (9 figs. omitted) 13 refs. Trans. V1403.
Order from LC or SLA mi$2.40, ph$3.30 59-16145

Trans. of Gosudarstvennyy Nauchno-kontrol'nyy Institut Veterinarnykh Preparatov. Trudy (USSR) 1956, v. 6, p. 197-211.

Musilek, V.
CROSS ANTIBIOSIS IN ACTINOMYCETES. [1959] 4p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15411

Trans. of Cesk[o]slovenska Mikrobiologie, 1957, v. 2, p. 183-184.

Shmaliy, K. V. and Nakhmanson, G. L.
SHORT CUT METHOD FOR DETECTION OF MICROBACTERIUM [SIC] TUBERCULOSIS IN THE CEREBROSPINAL FLUID (Uskorennyy Metod Obnaruzheniya Mikrobakterii Tuberkuloza v Spinnomozoovoy Zhidkosti) tr. by Tatiana Boldyroff. 10 Mar 59, 8p.
Order from LC or SLA mi$1.80, ph$1.80 59-14873

Trans. of mono. S'yezda Varchey-Pediatr. USSR (II). Trudy, 1956, p. 231-234.

Soprunov, F. F. and Galyulina, Z. A.
PREDATORY HYPHOMYCETES FROM THE SOIL OF TURKMENISTAN. [1959] 15p.
Order from ATS $16.95 ATS-39L32R

Trans. of Mikrobiologiya (USSR) 1951, v. 20, no. 6, p. 489-499.

Pathology

ANAEROBIC INFECTIONS: SELECTIONS FROM. 18 Aug 59, 36p. (1 fig. omitted) 13 refs. JPRS: L-917-N.
Order from OTS $1.00 59-13806

Trans. of mono. Anaerobnyye Infektsii, Kiev, 1957, p. 24-37ff and 145-156.

Botulinus toxin injected into the organism sharply disrupts the phagocytic capacity of the microphages and macrophages of the exudate obtained from the peritoneal cavity of animals subjected to intoxication. Suppression of the cells of the reticulo-endothelial system, is reflected in a sharp reduction in their capacity to capture colloidal solutions of dyes injected into the organism. Suppression of the phagocytic capacity of the cells of the oxudate, as well as of the fixed cells of the reticulo-endothelial system, is apparently one of the mechanisms of the pathogenic action of botulinus toxin on the organism.

SOVIET MEDICAL PERSONALITIES. 17 Apr 59, 10p. 1 ref. JPRS: L-1628-D.
Order from OTS $0.50 59-11507

Trans. of Klinicheskaya Meditsina (USSR) 1957 [v. 35] no. 11, p. 3; Zhurnal Nevropatologii i Psikhiatrii (USSR) 1958 [v. 58] no. 2, p. 255-256 and no. 5, p. 638-640.

Brendle, E.
FAMILY OCCURENCES OF PYLOROSPASM (Familiares Vorkommen von Pylorospasmus). 13 Sep 54 [2]p. (1 fig. omitted).
Order from SLA mi$1.80, ph$1.80 59-17848

Trans. of Monatsschrift fllr Kinderheilkunde (Germany) 1937, v. 68, p. 295-296.

Dezest, Georges.
THE BOUTONNEUSE FEVERS OF THE CAMEROUN ARE SERIOUS. [1959] [10]p.
Order from SLA mi$1.80, ph$1.80 59-15415

Trans. of Soc[iété de] Path[ologie] Exot[ique]. Bull-[etin] (France) 1953, v. 46, no. 3, p. 353-359.

Out of 32 cases among European patients at Yaoundé, 4 histories are reported in detail.

Dumery, P. R.
SELENIUM, AN ANTIMYCOTIC AGENT (Le Selenium, Agent Antimycosique). [1959] [4]p. 22 refs.
Order from SLA mi$1.80, ph$1.80 59-17868

Trans. of la Presse Médicale (France) 1953, v. 61, no. 80, p. 1646.

Clinical experience in the successful treatment of palmoplantar mycosis, clavus, pityriasis and onychomycosis is reported. There were no side effects. It is noted that experiments are in progress in North Africa in treatment of mycotic gummas.

Giroud, Paul, Le Gac, Paul, and Roger, Francis.
COMMUNICATIONS ON THE SUBJECT OF RICKETTSIA OF THE BOUTONNEUX-POURPRÉ GROUP AND OF THE AGENT OF SIBERIAN TICK TYPHUS. [1959] [7]p. 5 refs.
Order from SLA mi$1.80, ph$1.80 59-15418

Trans. of Société de Pathologie Exotique. Bulletin (France) 1953, v. 46, no. 6, p. 866-870.

Hammerstein, J. and Gansau, H.
PROBLEMS OF HORMONE THERAPY OF CANCER OF THE BREAST (Probleme der Hormontherapie des Mamma-Karzinoms). [1959] 14p. 23 refs.
Order from SLA mi$2.40, ph$3.30 59-17665

Trans. of Berliner Medizin (Germany) 1959, v. 10, p. 103-106.

Insarov, I. A.
FOR FURTHER IMPROVEMENT OF PROTECTION OF THE HEALTH OF THE POPULATION. 30 June 59, 9p. JPRS: L-847-N.
Order from OTS $0.50 59-13658

Trans. of Zdravookhraneniye Belorussii (USSR) 1959 [v. 5] no. 3, p. 3-7.

Le Gac, P., Giroud, Paul and others.
FAMILY EPIDEMIC OF VARICELLIFORM RICKETTSIOSIS IN A VILLAGE IN UBANGI-SHARI. [1959] [10]p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15419

Trans. of Soc[iété de] Path[ologie] Exot[ique]. Bull-[etin] (France) 1952, v. 45, no. 1, p. 19-23.

Linden, V. zur.
ANTITUSSIVE ACTION WITHOUT DANGER OF ADDICTION. [1959] 5p. 3 refs. S 953.
Order from SLA mi$1.80, ph$1.80 59-17066

Trans. of die Medizinische (West Germany) 1958, no. 23, p. 959-960.

Clinical experience in treatment of cough with Detigon (a propanol derivative) is reported. The drug exercises as strong an antitussive effect as morphine derivatives but its use entails no tendency to addiction. There is a complete absence of side effects.

Milov, B. C. and Kitayeva, S. Kh.
THE REDUCTION OF DIELECTRIC LOSSES IN PULP FOR CONDENSER AND HIGH VOLTAGE PAPER. [1959] 8p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17481

Trans. of Bumazh[naya] Prom[yshlennost'] (USSR) 1959, v. 34, no. 5, p. 4-7.

Successive removal of the cations of sodium, calcium and magnesium and also of iron and aluminum and the acid anions produced a reduction of the tangent of the angle of dielectric losses in the pulp. When the ash content of the pulp is reduced to about 0.07%, there is an alteration in the shape of the temperature curve, the region of the minimum value of the tangent of the angle of dielectric losses being displaced to the side. This means that it is possible to widen the limits of the operating temperature of the cellulose as a dielectric. The most practical reduction of dielectric losses in pulp appears to be when the ash content is reduced to 0.12%. In this instance the decrease of the tangent of the angle of dielectric losses, forestalls the appearance of the acid reaction of the acid groups of the cellulose, because of the blocking of the acid groups of the cellulose by the residual cations of calcium, magnesium, aluminum and iron. To get a low ash content of pulp it is necessary to wash thoroughly, treat with dilute acid and then wash with clean, salt-free water. Another method of reducing the ash content of paper dielectric is to use electrodialysis of the pulp. In laboratory experiments it was established that paper pulp in this case is freed from ash by a significantly less expenditure of time and energy than cellulose.

Mogilevchik, Z. K.
SANITARY LIVING CONDITIONS OF THE SOVIET PEOPLE IN THE LIGHT OF THE SEVEN-YEAR PLAN FOR THE DEVELOPMENT OF THE NATIONAL ECONOMY OF THE USSR. 4 Aug 59, 8p. 2 refs. JPRS: L-882-N.
Order from OTS $0.50 59-13753

Trans. of Zdravookhraneniye Belorussii (USSR) 1959, v. 5, no. 4, p. 45-49.

Health protection is defined as the improvement of working conditions, betterment of nutrition and living conditions, organization of public utilities, and raising of the material and cultural level of the population. There is only one paragraph in this general paper on public health measures in the conventional sense.

Sinitsyna, L. Ya.
CLINICAL ANALYSIS OF CAUSES OF MORBIDITY AND MORTALITY OF THE NEW-BORN ACCORDING TO CERTAIN MATERNITY INSTITUTIONS OF THE MOLDAVIAN SSR. 7 Aug 59, 6p. JPRS: L-1825-D.
Order from OTS $0.50 59-11756

Trans. of Zdravookhraneniye (USSR) 1959, no. 1, p. 24-28.

Fifth-seven per cent of the perinatal deaths were caused by delivery-connected conditions (cerebral hemorrhage, asphyxia, aspiration pneumonia). 37% of the newborn died of infections, and 6% were monsters. Various generalizations on prenatal care are presented.

Pharmacology and Toxicology

METHOD OF PREPARATION AND EXPERIMENTAL STUDY OF THE BASIC BIOLOGICAL PROPERTIES OF THE PROTECTIVE ANTIGENS OF THE PERTUSSIS ORGANISM [AND] STUDY OF THE EFFECT OF ANTI-PERTUSSIS IMMUNIZATION UPON THE COURSE OF THE ANAPHYLACTIC REACTION, tr. by P. V. DePorte. 15 June 59, 26p.
Order from LC or SLA mi$2.70, ph$4.80 59-18001

Trans. of mono. Spetsificheskaya Profilaktika Koklyusha, Moscow, 1958, p. 144-154 and 155-162.

Ata, S. and Staib, F.
THE EFFECT OF THE VITAMINS OF THE B-COMPLEX ON THE FREEZING OF CANDIDA ALBICANS. [1959] 3p.
Order from ATS $4.60 ATS-22L30G

Trans. of Intern[ationale] Z[eitschrift fiir] Vitaminforsch[ung] (Switzerland) 1957, v. 28, p. 157-160.

Avakyan, V. M.
CHANGES IN THE PHARMACOLOGICAL PROPERTIES OF ACETYLCHOLINE RESULTING FROM AN INCREASE IN THE SIZE (INCREASED WEIGHT) OF THE ACID PART OF ITS MOLECULE. [1959] 8p.
Order from ATS $7.95 ATS-50L32R

Trans. of *Farmakol[ogiya] i Toksikol[ogiya] (USSR) 1959, v. 22, no. 1, p. 20-27.

Bigalli, A., Della Santa, M., and Zampieri, A.
CLINICAL EVALUATION OF A NEW DIURETIC: HYDROCHLOROTHIAZIDE (Valutazione Clinica di un nuovo Diuretico: l'Idroclorotiazide). [1959] 15p.
Order from SLA mi$2.40, ph$3.30 59-17483

Trans. of Minerva Medica (Italy) 1959, v. 50 [no. 42] p. 1616-1620.

Brazhnikova, M. G., Uspenskaya, T. A. and others.
HELIOMYCIN, A NEW ANTIVIRUS ANTIBIOTIC. 17 Mar 59, 8p. (4 figs. omitted) 8 refs. JPRS: 1318-N.
Order from OTS $0.50 59-13266

Trans. of Antibiotiki (USSR) 1958, v. 3, no. 2, p. 29-34.

A method was developed of isolating heliomycin from the mycelia of Actinomyces flavochromogenes. Heliomycin protects mice against infection with the virus of influenza A when tested by the contact method, and exerts a therapeutic effect on mice infected intranasally with influenza virus.

Bronstein, J., Sulser, F. and others
THE EFFECT OF k-STROPHANTHOSIDE AND ADRENAL STEROIDS ON SODIUM TRANSPORT THROUGH THE ISOLATED FROG SKIN (Die Wirkung von k-Strophanthosid und Nebennierensteroiden auf den Natriumtransport durch die Isolierte Froschhaut). [1959] 7p. 7 refs.
Order from SLA mi$1.80, ph$1.80 59-17586

Trans. of Helv[etica] Physiol[ogica] et Pharmacol-[ogica] Acta (Switzerland) 1958, v. 16 [no. 2] p. C7-C10.

Camerino, B.
9-a-FLUORO-16-a-METHYLPREDNISOLONE, A NEW ANTIINFLAMMATORY STEROID (Il 9-a-Fluoro-16-a-Metilprednisolone, Nuovo Steroide (Anti-infiammatorio). [1959] 7p. 24 refs.
Order from SLA mi$1.80, ph$1.80 59-17590

Trans. of Il Farmaco; Ed[izione] Sci[entifica] (Italy) 1959, v. 14 [no. 1] p. 70-74.

Chetverikova, E. P.
THE RESPIRATION OF RABBIT CEREBRAL CORTEX AND LIVER SLICES UNDER ARTIFICIAL MEDINAL-INDUCED SLEEP. [1959] [13]p. 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17427

Trans. of Vopr[osy] Med[itsinskoy] Khim[ii] (USSR) 1956, v. 2, no. 5, p. 338-345.

Dycherhoff, H., Marx, R., and Ludwig, B.
ON THE MECHANISM OF ACTION AND THE EFFECTIVENESS OF CERTAIN ORGANIC SUBSTANCES AS BLOOD ANTICOAGULANTS (Über den Wirkungsmechanismus und die Verwendbarkeit einiger Blutgerinnungshemmender Organischer Substanzen). [1959] [12]p. (3 figs. 7 tables omitted) 8 refs.
Order from SLA mi$2.40, ph$3.30 59-17883

Trans. of Zeitschrift für die Gesamte Experimentelle Medizin (Germany) 1942, v. 110 [no. 4/5] p. 412-422.

Six blood-coagulation inhibiting substances, recently synthesized by the I. G-Farbenindustrie, act primarily through deionization of blood calcium required for the formation of thrombin. Ethylenebisiminodiacetic acid, alone among the six substances, produces a slight antithrombic effect. This substance is also outstanding in that it exhibits its clotting-inhibiting action on extravasal blood even when used in very low concentrations. None of the six substances inhibits blood coagulation when administered intravenously. As far as it could be ascertained, ethylenebisiminodiacetic acid presents no advantages over sodium citrate in its application for the storage of human blood.

From, A. A. and Saburova-Danilova, L. V.
COMPARATIVE RESULTS OF THE TREATMENT OF TRAUMATIC SHOCK WITH THE ANTISHOCK FLUID COLIPK-5 (Spravitel'nyye Rezul'taty Terapii Travmaticheskogo Shoka Protivoshokovoy Zhidkost'ya COLIPK-5) tr. by Claudius F. Mayer. [1959] [8]p. (4 figs. omitted) 6 refs. H-2908.
Order from OTS $0.50 59-21007

Trans. of unidentified mono. pub. Moscow, 1958, p. 75-79.

Gies, Th.
EXPERIMENTAL INVESTIGATIONS ON THE INFLUENCE OF ARSENIC ON THE ORGANISM (Experimentelle Untersuchungen über den Einfluss des Arsens auf den Organismus). [1959] [24]p. 8 refs.
Order from SLA mi$2.70, ph$4.80 59-17877

Trans. of [Naunyn-Schmiedeberg's] Archiv für Experimentelle Pathologie und Pharmakologie (Germany) 1878, v. 8, p. 175-196.

Golden, Carl B.
A CONTRIBUTION TO THE STUDY OF THE GENERAL ANESTHESIA BY NEMBUTAL IN SMALL DOMESTIC CARNIVEROUS ANIMALS. 7 Apr 54, 56p.
Order from SLA mi$3.60, ph$9.30 59-17363

Trans. of Thesis, Contribution à l'Etude de l'Anesthésie Générale par le Nembutal chez les Petits Carnivores Domestiques, Paris U., 1952.

Helbig, D.
SH-GLUTATHIONE AND MARCOSIS (SH-Glutathion [und] Narkose). 14 Sep 54 [5]p. (3 figs. 2 tables omitted).
Order from SLA mi$1.80, ph$1.80 59-17851

Trans. of der Anaesthesist (Germany) 1954, v. 3, no. 2, p. 82-84.

Horisberger, B. and Grandjean, E.
ACTION OF RESERPINE AND OF ISOPROPYL-ISONICOTINIC ACID HYDRAZIDE (MARSILID) ON A CONDITIONED FLIGHT REACTION OF RATS (Über die Wirkung von Reserpin und von Isopropyl-Isonicotinsäurehydrazid (Marsilid) auf eine Konditionierte Flunchtreaktion der Ratte). [1959] 11p. 11 refs.
Order from SLA mi$2.40, ph$3.30 59-17596

Trans. of Helvet[ica] Physiol[ogica et Pharmacologica] Acta (Switzerland) 1958, v. 16 [no. 2] p. 146-151.

Pretreatment with iproniazid (Marsilid) antagonized a reserpine-(Serpasil) induced inhibition of a conditioned escape response of the rat.

Kovács, K., Dávid, M. A., and Horváth, I. W.
INFLUENCE OF CHLOROTHIAZIDE ON EXPERIMENTAL ANTIDIURESIS IN THE RAT (Beeinflussung der Experimentellen Antidiurese bei Ratten durch Chlorothiazid). [1959] [1]p.
Order from SLA mi$1.80, ph$1.80 59-17594

Trans. of summary of Naunyn-Schmiedeberg's Arch[iv für] Exp[erimentelle] Path[ologie] u[nd] Pharmak[ologie] (Germany) 1959, v. 236 [no. 2] p. 382-391.

Lecocq, M.
SUPPOSITORIES. PT. I (Les Suppositoires; Pt. I). [1959] 11p.
Order from SLA mi$2.40, ph$3.30 59-15056

Trans. of Problèmes et Techniques (France) 1958, no. 43, p. 19-33.

Lycke, Erik.
STUDIES OF THE INACTIVATION OF POLIOMYELITIS VIRUS BY MEANS OF TREATMENT WITH FORMALDEHYDE. [1959] 69p. 73 refs.
Order from SLA mi$3.90, ph$10.80 59-15814

Trans. from unidentified mono, Stockholm, 1958.

The course of inactivation in the treatment of poliomyelitis with formaldehyde proved to diverge strikingly from the course of a chemical reaction of the first order, i.e., from a rectilinear curve in a semilogarithmic diagram. The deviation was found to depend on the initial activity of the virus, and appeared independently of the occurrence of cell material or a substance of a non-virus nature in the virus suspension that binds formaldehyde. It could not be explained as a reactivation of a partially inactivated virus. It very soon appeared to be caused by side-reactions, without a really inactivating effect, between formaldehyde and reactive groups in the protein envelope of the virus particle. The course of the inactivation could be pretty well described by the formula $\log y_o - \log y = \underline{a} \log (1+\underline{b}t)$. Various methods for calculating the numerical values of the formula's two parameters, $\underline{a}$ and $\underline{b}$, were tested. The rate of the spontaneous inactivation of the virus at various temperatures and pH was investigated. It was found that inactivation in the presence of formaldehyde reflects the effect of formaldehyde alone, practically without interference. The parameter values were used for the study of the factors determining the velocity of the reaction. The activation energy in inactivation with formaldehyde within a temperature range of 7° to 37° C was calculated in two experiments as 27,900 and 20,400 calories per "mol" respectively. The inactivation had a minimum velocity at pH 7, and the velocity of reaction increased with both a higher and a lower pH. Broadly speaking, furthermore, the reaction velocity appeared to be proportional to the concentration of formaldehyde. In the discussion aspects of the production of polio vaccine are referred to from the standpoint of the experimental results. (Author's summary)

Maffei, R. and Errigo, E.
CLINICAL AND LABORATORY OBSERVATIONS ON THE DIURETIC ACTIVITY OF HYDROCHLOROTHIAZIDE (Osservazioni Cliniche e di Laboratorio sull'Attivita Diuretica dell'Idroclorotiazide). [1959] 14p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-17484

Trans. of Minerva Medica (Italy) 1959, v. 50 [no. 42] p. 1625-1628.

Richterich, R., Spring, P. and Thönen, H.
CLINICAL EXPERIENCE WITH HYDROCHLOROTHIAZIDE, A NEW ORAL SULFONAMIDE DIURETIC (Klinische Erfahrungen mit Hydrochlorothiazid, einem Neuen, Oral Verabreichbaren Sulfonamid-diuretikum). [1959] 38p. 29 refs.
Order from SLA mi$3.00, ph$6.30 59-17071

Trans. of Schweiz[erische] Med[izinische] W[ochenschrift] (Switzerland) 1959, v. 89 [no. 13] p. 353-361.

Preliminary experience with edematous patients has shown that 12.5 to 25 mg of hydrochlorothiazide daily are sufficient for successful diuretic therapy in most cardiac patients. In other edematous disorders, particularly cirrhosis of the liver, somewhat higher doses (up to 100 mg daily) had to be used occasionally. The danger of hypopotassemia is considerably less with hydrochlorothiazide than with chlorothiazide. Occasionally the development of a hypochloremic alkalosis (as is frequently observed after mercurial diuretics) has been seen. The hypotensive action of hydrochlorothiazide is similar to that of chlorothiazide. No gastrointestinal or allergic side effects or toxic disturbances of hepatic or renal function were observed. (Author's summary)

Rousso, Ch. and Perrier, C. V.
CLINICAL AND METABOLIC STUDY OF A NEW CORTICOSTEROID, DEXAMETHASONE (Etude Clinique et Metabolique d'un Nouveau Corticosteroide, la Dexamethasone). [1959] 15p. 10 refs.
Order from SLA mi$2. 40, ph$3. 30 59-17587

Trans. of Schweiz[erische] Med[izinische] W[ochen]schr[ift] (Switzerland) 1959, v. 89 [no. 15] p. 405-407.

Dexamethasone (9-α-fluoro, 16-α-methyl-prednisolone) has exactly the same clinical indications as prednisone and is 6-8 times as potent. Like prednisone, dexamethasone does not retain sodium or water. On the contrary, it has some diuretic action and can potentiate other diuretic agents. Like all hormones with glycocorticoid properties dexamethasone can disturb the carbohydrate metabolism and have a deteriorating effect on diabetes. At present dexamethasone is the most potent inhibitor of ACTH. As a rule administration of 1 mg as a single oral dose is sufficient to reduce the plasma 17-hydroxycorticosteroids to zero 8 hours later. We have neither sufficient cases nor experience to judge the effect of dexamethasone on the digestive tract, but have cited a case that suggests extreme caution in this regard. (Author's summary and conclusions)

Schechter, A.
THREE NEW SYNTHETIC STEROIDS; TRIAMCINOLONE, MEDROL, HEXADECADROL (Trois Nouveaux Stéroides de Synthèse (Triamcinolone, Médrol, Hexadecadrol). [1959] 10p. 7 refs.
Order from SLA mi$1. 80, ph$1. 80 59-17589

Trans. of [la] Presse Méd[icale] (France) 1959, v. 67 [no. 17] p. 684-685.

Shpigunov, F. A.
THE PROBLEM OF THE IMMUNOLOGICAL EFFECTIVENESS OF LIVE VACCINES UPON COMBINATION OF THEM WITH NIISI POLYVACCINE. Rept. 2. 21 Aug 59, 8p. 6 refs. JPRS: L-1840-D.
Order from OTS $0. 50 59-11768

Trans. of *Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1959, v. 30, no. 4, p. 19-23.

Simultaneous immunization of rabbits with small-pox vaccine combined with live brucellosis vaccine or NIISI polyvaccine, and also with all three of the indicated vaccines had no essential effect on the immunological effectiveness of small-pox vaccine. The immunological effectiveness of live brucellosis vaccine following the immunization of guinea pigs with various combinations of it with NIISI polyvaccine and small-pox vaccine was less expressed than following immunization with brucellosis vaccine alone.

Suvorov, N. N., Sokolova, L. V. and others.
SYNTHESIS OF PROGESTERONE FROM SOLASODINE, tr. by Paul V. DePorte. 30 Mar 59, 7p. 11 refs.
Order from LC or SLA mi$1. 80, ph$1. 80 59-14613

Trans. of Khimicheskaya Nauka i Promyshlennost' (USSR) 1958, v. 38, no. 2, p. 281-282.

Solasodine, the aglycone of a steroid alkaloid isolated from the plant "bird's nightshade" (Solanum aviculare Forst) was transformed into Δ5, 16-pregnadienol-3 β - one-20 acetate in three stages, proceeding without isolation of the intermediate products: (1) acetylation of the hydroxyl group in 3-position and opening of the 6-membered nitrogen-containing ring; (2) oxidative splitting of the double bond with formation of a keto group in 20-position; (3) splitting-off of the lateral chain from 16-position with formation of a Δ 16-17 double bond. The structural equations are not given.

Zakharova, M. S., ed.
SPECIFIC PREVENTION OF PERTUSSIS, tr. by P. DePorte. [1959] [18]p.
Order from LC or SLA mi$2. 40, ph$3. 30 59-18153

Trans. of unidentified Russian mono., pub. by Medgiz, Moscow, 1958.

This translation is in 2 parts. The first part, by M. S. Zakharova, entitled specific prevention of pertussis, appears to be the introductory paper presented at the Scientific Conference on the Specific Prophylaxis of Pertussis which was held on March 5 and 6, 1958 in the USSR Institute of Epidemiology and Microbiology. The second part of the translation consists of resolutions adopted by members of the above-named conference.

Radiobiology

Abaturova, Ye. A. and Shubina, A. V.
THE USE OF AMINAZINE IN RADIATION SICKNESS (PROPHYLACTIC EFFECT). 7 July 59, 2p. JPRS: L-865-N.
Order from OTS $0. 50 59-13684

Trans. of Meditsinskaya Radiologiya (USSR) 1959 [v. 4] no. 3, p. 77.

Kalyayeva, T. V.
THE EFFECT OF PENTOZYL ON LEUKOPOIESIS IN RADIATION LEUKOPENIA. 22 June 59, 8p. 9 refs. JPRS: L-835-N.
Order from OTS $0. 50 59-13642

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1959, v. 3, no. 1, p. 36-39.

Krongauz, A. N.
CURRENT PROBLEMS OF DOSIMETRY IN RADIATION THERAPY. 25 Aug 59, 13p. 10 refs. JPRS: L-1843-D.
Order from OTS $0. 50 59-11772

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1959, v. 34, no. 3, p. 52-59.

Peredel'skiy, A. A.
ECOLOGICAL STUDY OF IONIZING RADIATION. 11 Aug 59, 17p. 72 refs. JPRS: 859-D.
Order from OTS $0.50 59-11758

Trans. of Itogi Nauki. Biologicheskiye Nauki (USSR) 1957, no. 1, p. 379-392.

This review takes into consideration such items as the spread of radioactive substances by migratory fowl which feed in industrially contaminated waters, or by larvae in contaminated ponds which metamorphose into flying insects.

Toropova, G. P. and Yermolayeva, N. V.
THE CHANGE IN THE PHYSICO-CHEMICAL PROPERTIES OF DESOXYRIBONUCLEIC ACID IN TISSUES OF IRRADIATED ANIMALS. 4 Feb 59, 8p. 1 ref. JPRS L-516-N.
Order from OTS $0.50 59-13105

Trans. of Meditsinskaya Radiologiya (USSR) 1958, [v. 3] no. 5, p. 24-29.

Zoology

Berim, N. G. and Yedel'man, N. M.
ON THE PHYSIOLOGICAL RESISTANCE OF INSECTS TO DDT AND BHC AND THE WAYS OF OVERCOMING IT (O Fisiologicheskoy Ustoychivosti Nasekomykh k DDT i GKhTsG i Putyakhyeye Preodoleniya). Dec 57 [12]p. 19 refs. C. T. S. no. 382.
Order from LC or SLA mi$2.40, ph$3.30 59-18527

Trans. of Entomologicheskoye Obozreniye (USSR) 1952, v. 32, p. 15-25.

Serdyukova, G. V.
KEY TO HYALOMMA TICKS OF RUSSIA. [1959] [7]p. (7 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-15972

Partial trans. (p. 79-83) of mono. Det. Fauna SSR, 1956, v. 64, p. 1-122.

CHEMISTRY

*ZHURNAL OBSHCHEY KHIMII (USSR) 1959, V. 29, NO. 3, P. 701-1044 (Journal of General Chemistry). [1959] 1v. SOV-79-29-3-(1-61)/61.
Order from OTS $1.40, $7.50/6 mo. PB 141 075T-17
Foreign $1.65, $9.00/6 mo.

Consists of abstracts in English.

Elias, H. G. and Ritscher, T. A.
A SIMPLE TWO-CHAMBER GLASS OSMOMETER WITH A GLASS MEMBRANE. [1959] 6p. 5 refs.
Order from SLA mi$1.80, ph$1.80 59-17254

Trans. of J[ournal of] Poly[mer] Sci[ence] (U. S.) 1958, v. 28 [no. 118] p. 648-651.

A simple osmometer has been devised which is made completely of glass and which has no seals. With this instrument, osmotic measurements can be made under conditions which are destructive to the conventional high polymer membranes (e.g., temperature range of 100 to 300° C, super pressure, use of concentrated acids as solvents). The porous glass which forms the membrane was developed by the Corning Glass Works.

Kowalski, G. and Lewicki, L.
THE EXTRACTION OF TAR OILS WITH UREA. I. THE EXTRACTION OF BASE-FREE CARBOLIC OIL. [1959] 15p.
Order from ATS $22.90 ATS-38L31G

Trans. of Brennstoff-Chem[ie] (West Germany) 1959, v. 40, no. 2, p. 33-41.

Analytical Chemistry

PROCEDURE FOR ISOLATING THE ISOXIMES (LACTAMS) OR THEIR HYDROLYSIS PRODUCTS FROM THEIR SOLUTIONS IN CONCENTRATED SULFURIC ACID. [1959] [2]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17890

Trans. of French patent 881,646, gr. 14, cl. 1, claimed 30 Apr 42, delivered 22 Jan 43, pub. 30 Apr 43; pat. claim filed in Germany 30 Apr 41, by Bata a. s., Bohemo-Moravie, Czechoslovakia, by power of attorney: Bletry.

The process consists in considerably diluting these solutions with water or ice (or both), then neutralizing these diluted solutions, if necessary, after heating at the temperature required for hydrolysis, or without such heating. The neutralization is performed with oxides, hydroxides or metal carbonates which form insoluble sulfates. The mixture is filtered and finally the filtrate is freed from its water by distillation.

Aricescu, Ioana and Grigorovici, Radu.
AN APPARATUS FOR TRICHROMATIC COLORIMETRY ADAPTABLE TO PULFRICH'S PHOTOMETER. [1959] 14p. 4 refs. T-3032.
Order from SLA mi$2.40, ph$3.30 59-15993

Trans. of Acad[emia] Rep[ublicii] Populare Romine. Bul[etin] Stiintific. Sect[ia de Stiinte] Mat[ematice si] Fiz[ice] (Rumania) 1952, v. 4, no. 3, p. 617-627.

Aumeras, M., Minangoy, R. and others.
INFRARED SPECTROMETRIC ANALYSIS OF PHENOL AND CRESOL MIXTURES. [8]p. (figs. tables refs. omitted)
Order from SLA mi$1.80, ph$1.80 59-17312

Trans. of [Société Chimique de France. Bulletin, 1953] no. 183 [p. 924-927].

Bazzi, B. and Santi, R.
IMPROVEMENTS IN THE METHOD OF CHEMICAL ASSAY OF RESIDUES OF O,O-DIMETHYLDITHIOPHOSPHORYL-N-METHYL-ACETAMIDE IN OLIVE OIL. [1959] 4p.
Order from ATS $6.00 ATS-26L32I

Trans. of Olivicoltura (Italy) 1958 [v. 13] no. 4, p. 3-5.

Claassen, A. and Bastings, L.
THE EXTRACTION OF FERRIC CHLORIDE WITH METHYL ISOBUTYL KETONE AND AMYL ACETATE. [1959]
Order from BISI £2 BISITS-1310

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1958, no. 6, p. 403-409.

Cruse, Kurt.
THE HIGH FREQUENCY TITRATION IN ANALYTICAL CHEMISTRY. [1959] 20p. (29 figs. omitted) NP-tr-39.
Order from SLA mi$2.40, ph$3.30 59-17123

Trans. of [Experientia (Switzerland) 1956, suppl. no. 5] p. 107-133.

Danilov, S. N., Gintse, N. F. and Okun, M. G.
CHEMISTRY OF XANTHATES AND VISCOSE. IX. DETECTION OF POLYSULFUR COMPOUNDS IN VISCOSE AND THEIR ROLE. [1959] 12p.
Order from ATS $7.75 ATS-47L32R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1958, v. 28 [no. 12] p. 3192-3202.

Granzhan, A. V. and Volkov, B. V.
INSTRUMENT FOR PLANT CONTROL OF THE ACETYLENE CONTENT IN GASES (Pribor dlya Tsekhovogo Kontrolya Soderzhaniya Atsetilena v Gaze). [1959] [2]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17845

Trans. of Zavodskaya Laboratoriya (USSR) 1950. v. 16, p. 1432.

A compact portable instrument is described which was devised for the analysis of gases containing 0.005 to 0.8% acetylene.

Gribova [Y]e. A. and Levin, E. S.
TITRATION OF AN AMINE MIXTURE IN A NON-AQUEOUS MEDIUM. [1959] 7p. 12 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17606

Trans. of *Zavodskaya Laboratoriya (USSR) 1959, v. 25, no. 1, p. 38-41.

For a quantitative determination of aniline, as well as other aromatic amines of identical strength, perchloric acid solution in dioxane can be used for titration in acetone medium. The cyclo- and dicyclohexylamine content can be determined separately if the sample is titrated with preliminarily treated salicylaldehyde. The content of cyclohexylamine, dicyclohexylamine and aniline in the mixture can be determined by two titrations (without any preliminary treatment with salicylaldehyde and after such a treatment) in acetone medium.

Herbain, M[aurice] and Bertin, D[aniel].
MULTIPLE-USE MICROSEPARATOR; FILTRATION, DRYING, EVAPORATION. APPLICATION TO RADIOMETRIC DETERMINATIONS (Microséparateur à Usages Multiples; Filtration, Essorage, Évaporation). Application aux Dosages Radiométriques). [1959] 8p. (1 fig. omitted).
Order from SLA mi$1.80, ph$1.80 59-17468

Trans. of Société de Chimie Biologique. Bulletin (France) 1959, v. 41 [no. 4] p. 637-642.

The microseparator described consists of a glass jacket enclosed in a detachable metal mount; its lower end may be equipped in different ways according to the operations to be performed. For filtrations, this end is closed by a grid which supports the filtrating element and is set in a holder connected to a vacuum line. For centrifugations, the grid and nozzle are replaced by a flat-bottomed shutter with or without a filter paper or an independent cup for gathering the precipitate. The arrangement for centrifugation may be utilized as a closed chamber for micro-evaporations in a controlled atmosphere. The device is particularly suitable for obtaining, on paper, microprecipitates of labelled substances, in thin and even layers, for direct measurements of radioactivity.

Herfurth, Otto R.
ON THE APPLICABILITY OF WOVEN-METAL CLOTH IN THE FILTER TECHNIQUE (Über die Einsatzmöglichkeiten von Metallgewebentüchern in der Filtertechnik). [1959] [9]p.
Order from SLA mi$1.80, ph$1.80 59-17634

Trans. of Zellwolle, Kunstseide, Seide (Germany) 1942 [v. 47] no. 1, p. 2-8.

Ivanova, G. V.
NEPHELOMETRIC METHOD FOR DETERMINING ORGANIC IMPURITIES IN LIQUID OXYGEN AND IN "EVAPORATOR LIQUID". [1959] 5p.
Order from ATS $7.75 ATS-14L33R

Trans. of Kislorod (USSR) 1959, v. 12, no. 1, p. 23-35.

Prat, J. and Bodin, D.
POLAROGRAPHIC AND AMPEROMETRIC DETERMINATION OF MALATHION. [1959] 9p.
Order from ATS $9.90 ATS-73L31F

Trans. of Mém[orial des] Serv[ices] Chim[iques de l'Etat] (France) 1957, v. 41, p. 243-251.

Pristavka, D. and Krcmery, V.
THE DETERMINATION OF AMMONIA IN AMMONIUM SALTS IN THE PRESENCE OF UREA BY MEANS OF $Cd(OH)_2$. [1959] 4p.
Order from ATS $6.95 ATS-17L32C

Trans. of Chem[icke] Zvesti (Czechoslovakia) 1956, v. 10, no. 3, p. 183-187.

Weiner, R. and Ney, E.
QUANTITATIVE DETERMINATION OF SULFATES IN CHROMIC ACID SOLUTIONS (DEAD- STOP-TITRATION). [1959] [12]p. 10 refs.
Order from SLA mi$2.40, ph$3.30 59-17624

Trans. of Metalloberfläche (West Germany) 1957, v. 11, no. 12, p. 377-379.

Inorganic Chemistry

RUSSIAN JOURNAL OF INORGANIC CHEMISTRY, 1959, NO. 1, P. 1-105. Apr. 59, 105p.
Order from CHP $12.00 $90.00/year

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1959 [v. 4] no. 1, p. 3-[245].

Alen, J. E.
ETHYLSULFATE SALTS. [1959] 2p.
Order from MDF $2.00 MDF A-138

Trans. of [Svenska Vetenskapsakademien, Stockholm]. Ofversigt af Förhandlingar, 1880, v. 37, no. 8, p. 42 and 45.

Aruzumi, Masaru, Kumao, Shinichi, and Hara, Ryusaburo.
ITS USE AS PROTECTIVE COATING FOR IRON AND COPPER SURFACES; PREPARATION AND ANALYSIS OF PURE SODIUM CYANATE (NaCNO). Rept. no. 1 on Sodium Cyanate. [1959] [15]p. (1 fig. omitted).
Order from SLA mi$2.40, ph$3.30 59-17884

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1943, v. 46, p. 237-240.

Flusin, George and Aall, Christen.
THE PREPARATION OF CALCIUM CARBIDE; THE STUDY OF THE SYSTEM CALCIUM CARBIDE-CALCIUM OXIDE. [1959] [2]p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-10716

Trans. of Journal of the Electric Furnace and Electrochemical Industries, 1935, v. 44, p. 317.

Grebenshchikova, V. I. and Bobrova, V. N.
COPRECIPITATION OF LANTHANUM, CERIUM, AND AMERICIUM WITH POTASSIUM SULFATE. [1958] 10p. 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3678

Trans. of Zhur[nal] Neorg[anicheskoy] Khim[ii] (USSR) 1958, v. 3, no. 1, p. 40-45.

Samsonov, G. V. and Markovskiy, L. Y.
CHEMISTRY OF BORIDES. [1959] 110p. 244 refs.
Order from LC or SLA mi$5.70, ph$16.80 59-17699

Trans. of Uspekhi Khimii (USSR) 1956, v. 25, [no. 2] p. 190-241.

Organic Chemistry

PROCEDURE AND APPARATUS FOR MANUFACTURE OF AMINOCARBOXYLIC ACIDS OR THE LACTAMS WHICH ARE DERIVED FROM THEM. [1959] [5]p. (1 illus. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-17888

Trans. of French patent 882,048, gr. 14, cl. 1, claimed 13 May 42, delivered 15 Feb 43, pub. 14 May 43; pat. claim filed in Germany 15 May 41, by Thüringische Zellwolle Aktiengesellschaft and Zellwolle-und Kunstseide-Ring G. m. b. H., Germany by power of attorney: G. Beau De Lomenie and Andre Armengaud.

The process starts with the oximes of ketonic nuclea and is characterized by the fact that, by means of a rearrangement agent, limited quantities of oximes are decomposed in a continuous operation, by intermittent working methods. The rearrangement agent is preferably concentrated sulfuric acid. Care is taken that the excess of the reaction, which is the result of the continuous flow of the components of the reaction, passes in one or several other containers where the reaction stops. In this process the reaction is kept in its most favorable working condition by heating or chilling. The constituents i. e., the oximes, in molten or finely powdered form flow through tubes into cups of a cascade system in such a way that, if the cup that is placed higher is filled and contains only about 50 to 60 cc of the oxime, the excess flows through channels or tubes in another cup. This cup is preferably wider. From here, it runs into other cups, preferably of increasing content, and in this case the cups (at least the

cups which are placed higher in the cascade) can also be arranged side by side. The cups, channels and tubes of the higher part can be heated or cooled, whereas the lower ones need only cooling.

PROCEDURE FOR REARRANGEMENT OF CETOXIMES. [1959] [6]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17887

Trans. of French patent 879,189, gr. 14, cl. 1, appl. for 9 Feb 42, delivered 10 Nov 42, pub. 16 Feb 43, pat. claim filed in Germany 5 May 39, by I. G. Fa[r]benindustrie Aktiengesesellschaft, Germany, by power of attorney: Bletry.

A process to rearrange ketoximes with sulfuric acid at high temperature is described which is characterized by the use of sulfuric acid which contains at most 2% water, or oleum, to bring about the rearrangement. One makes the process continuous by returning into circulation the solution which has already been rearranged and, without interruption, adding fresh oxime solution or, separately, oxime and sulfuric acid. This addition can be made at the same point or at different points. The use of the lactams obtained by rearrangement of ketoximes by the above defined process for new industrial products.

PROCEDURE FOR THE PREPARATION OF AMINOCARBONIC ACIDS IN PURE FORM FROM OXIMES. [1959] 8p.
Order from LC or SLA mi$1.80, ph$1.80 59-17889

Trans. of French patent 881,969, gr. 14, cl. 1, claimed 9 May 42, delivered 8 Feb 43, pub. 13 May 43, pat. claim filed in Germany 15 May 41, by Thuringische Zellwolle Aktiengesellschaft and Zellwolle und Kunst[s]eide-Ring G. m. b. H., Germany, by power of attorney: D. A. Casalonga.

The present invention concerns a process for the preparation of pure aminocarbonic acids by saponification of lactams which were obtained from oximes of ketons with ring closures using the Beckmann reaction with concentrated sulfuric acid; this process has the following characteristics, which can either occur individually or in combination. (1) One saponifies the lactams without isolating them previously by means of the same mount of sulfuric acid after addition of water and in the presence of salts of metals. These metals, like iron, aluminum and chrome, have the tendency to form gelatinous hydroxides. Then one neutralizes by addition of oxides, hydroxides or carbonates of alkaline earth, preferably of milk of lime or of bariumhydroxide; the solution is filtered from the gypsum, the barium sulfate etc., which have been formed. The aminocarbonic acids are isolated out of the filtrate in a well-known manner. (2) The 82% sulfuric acid which is used for the Beckmann reaction is diluted until one obtains a 10 to 20% acid. (3) One adds the metallic salts to the concentrated acid of the reaction. (4) One neutralizes after saponification separates cold the sulfuric acid and heats before filtration of the insoluble sulfates. The present invention also concerns the new industrial products which were obtained by using the above mentioned process. (Author's conclusion)

Ajello, Tommaso.
REACTIONS WITH AMYL NITRITE. NOTE III. [1959] [13]p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-17765

Trans. of Gazzetta Chimica Italiana, 1939, v. 69, p. 315-322.

Triphenylpyrrole subjected in an ether solution to the action of amyl nitrite is transformed by it into a compound of $C_{22}H_{16}N_2O_2$ with a melting point of 192-194° by which the constitution of nitrotriphenylpyrrole is demonstrated. Diphenylpyrrole subjected to the same experiment is transformed into a mixture of two substances. The first, which has the formula $C_{16}H_{12}N_2O_2$, and a melting point of 174° was demonstrated to be 3-nitro-2-5-diphenylpyrrole.

Baryshnikova, A. N. and Titov, A. I.
THE MECHANISM OF NITRATION OF UNSATURATED COMPOUNDS. [1959] 5p.
Order from ATS $9.25 ATS-01L33R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1953, v. 91, no. 5, p. 1099-1102.

Bogdanov, M. N. and Kudryavtsev, G. I.
SYNTHESIS AND POLYCONDENSATION OF p-AMINOMETHYL-PHENYLALKANECARBOXYLIC ACIDS. [1959] 5p.
Order from ATS $7.00 ATS-15L32R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1959, v. 29, no. 3, p. 986-989.

Flid, R. M., Krasotkin, A. Ye. and others.
EFFECT OF ALKALINE ADDITIONS IN THE CATALYTIC OXIDATION OF PRIMARY ALCOHOLS TO ALDEHYDES. [1959] 2p.
Order from ATS $3.50 ATS-32L32R

Trans. of Khim[icheskaya] Nauka i Prom[yshlennost'] (USSR) 1958, v. 3, no. 5, p. 683.

Hilgetag, G., Schramm, G. and Teichmann, H.
CONTRIBUTIONS TO THE CHEMISTRY OF THIOPHOSPHATES. PT. I. BEHAVIOR OF TRIMETHYL THIONOPHOSPHATE AT HIGHER TEMPERATURES. [1959] 14p.
Order from ATS $17.95 ATS-06L32G

Trans. of J[ournal für] Prakt[ische] Chem[ie] (East Germany) 1959, Ser. 4, v. 8, p. 73-89.

Hilgetag, G. and Teichmann, H.
CONTRIBUTIONS TO THE CHEMISTRY OF THIOPHOSPHATES. PT. II. SOME METHYLATION REACTIONS OF THE TWO ISOMERIC TRIMETHYL THIOPHOSPHATES. [1959] 7p.
Order from ATS $8.95 ATS-29L32G

Trans. of J[ournal für] Prakt[ische] Chem[ie] (East Germany) 1959, ser. 4, v. 8, p. 90-96.

Hilgetag, G. and Teichmann, H.
CONTRIBUTIONS TO THE CHEMISTRY OF THIOPHOSPHATES. PT. IV. O, O-DIMETHYL THIOPHOSPHATES. [1959] 7p.
Order from ATS $8.50 ATS-31L32G

Trans. of J[ournal für] Prakt[ische] Chem[ie] (East Germany) 1959, ser. 4, v. 8, p. 104-111.

Il'in, A.
PREPARATION OF HYDRAZINE SALTS. [1959] 5p.
Order from ATS $9.00 ATS-54L32R

Trans. of Inst[itut] Chistykh Khim[icheskikh] Reaktivov. Trudy (USSR) 1939, no. 17, p. 65-69.

Kakiuchi, Y.
MEASUREMENT OF INFRARED ACTIVE OUT-OF-PLANE CH VIBRATION BANDS OF SEVERAL MONO-SUBSTITUTED BENZENE DERIVATIVES. [1959] 9p.
Order from ATS $12.95 ATS-34L32J

Trans. of Nihon Kagaku Zasshi (Japan) 1959, v. 80, no. 1, p. 28-31.

Kakiuchi, Y.
THE OUT-OF-PLANE VIBRATIONS OF BENZENE. [1959] 9p.
Order from ATS $13.20 ATS-35L32J

Trans. of Nihon Kagaku Zasshi (Japan) 1959, v. 80, no. 1, p. 21-25.

Kakiuchi, Y.
A SIMPLIFIED TREATMENT OF THE OUT-OF-PLANE CH VIBRATIONS OF BENZENE AND ITS METHYL DERIVATIVES. [1959] 11p.
Order from ATS $14.25 ATS-61L32J

Trans. of Nihon Kagaku Zasshi (Japan) 1959, v. 80, no. 3, p. 250-255.

Kleymenov, N. A., and Nalbandyan, A. B.
THE ROLE OF OZONE IN INITATING THE OXIDATION OF SATURATED GASEOUS HYDROCARBONS. 17 Dec 58 [7]p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-10632

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 122, no. 1, p. 103-105.
Another translation is available from SLA mi$1.80, ph$1.80 as 59-10427 [1958] [8]p.

It was shown that the starting points of oxidation of CH_4, C_3H_8, and H_2 in the presence of small amounts of O_3 coincides with the starting of decomposition of O_3 into O_2 and O. This is explained by the assumption that an active particle like a free atom or an excited molecule of O must be formed to initiate a chain oxidation. If excited O molecules initiate the chain oxidation, dilution with N should lower the reaction rate. Since such a lowering could not be found, the reaction must proceed through activated O atoms. By using a liquid N trap, it was found that the amount of CH_3OH and CH_2O formed by oxidation of CH_4 with O at a pressure 15 mm of Hg was a function of contact time. A further proof that not excited O_2 but active O atoms were responsible for the CH_4 oxidation was established by irradiating a CH_4-O_2 mixture diluted up to 1:10 by N, and the reaction rate of the oxidation was not affected.

Liberman, A. L., Loza, G. V. and others.
CATALYTIC CYCLIZATION OF n-PENTANE AND n-HEXANE WITH FORMATION OF A FIVE-MEMBERED RING [Kataliticheskaya Tsiklizatsiva n-Pentana i n-Geksana s Obrazovaniyem Pyatichlennogo Tsikla]. [1959] 10p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17403

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 120, no. 4, p. 789-792.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-10893, [1958] 5p.

Natta, G., Mazzanti, G. and others.
ISOTACTIC POLYMERS AND STEREOBLOCK POLYMERS OF PROPYLENE. [1959] [34]p. 18 refs.
Order from SLA mi$3.00, ph$6.30 59-17763

Trans. of la Chimica e l'Industria (Italy) 1957, v. 39, no. 4, p. 275-283.
Another translation is available from RIS, $36.00 as RIS-96958 [26 Dec 58] 32p.

Linear α-olefin polymers with high melting points are described. By using $TiCl_3$ and VCl_3 as catalysts, isotactic propylene polymers were obtained which in the crystalline state consisted of spirals the tertiary symmetry of which had an identity period of 6.8Å. It was possible to separate stereoblock polymers from isotactic polymers by fractionated extraction by solvents of homologous aliphatic hydrocarbons. Stereoblock polymropylenes of about 25% crystallinity and high molecular weight represent a new category of elastomers which, in the oriented state, exhibit high reversible elongation.

Natta, G., Pino, P. and Mazzanti, G.
STEREOSPECIFIC POLYMERIZATION OF α-OLEFINS. PART I. [1959] 16p.
Order from ATS $18.50 ATS-49L32I

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1957, v. 87 [no. 5] p. 528-548.
Another translation is available from SLA mi$3.00, ph$6.30 as 59-15049 [1959] 37p.

Nesmeyanov, A. N., Borisov, A. Ye. and others.
SYNTHESIS OF ORGANOTIN COMPOUNDS FROM ORGANOMERCURY COMPOUNDS AND STANNOUS SALTS IN INERT SOLVENTS. [1959] 4p.
Order from ATS $7.00 ATS-12L33R

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 2, p. 263-266.

Okamura, Seizo and Yamashita, Takao.
COPOLYMERS OF ACRYLONITRILE WITH ISOBUTYLENE AND THAT WITH METHACRYLONITRILE. Rept. no. 2 on Synthetic Fibers from Acrylonitrile. [1959] 6p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-17083

Trans. of Sen-i Gakkaishi (Japan) 1953, v. 9 [no. 9] p. 446-448.

Pravednikov, A. N. and Medvedev, S. S.
POLYMERIZATION OF CHLOROPRENE IN THE PRESENCE OF THE ω-POLYMER OF CHLOROPRENE. [1959] [9]p. 13 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17770

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 103, no. 3, p. 461-464.

Smidt, J., Hafner, W. and others.
CATALYTIC REACTIONS OF OLEFINS IN THE PRESENCE OF COMPOUNDS OF THE METALS OF THE PLATINUM GROUP. [1959] 14p.
Order from ATS $16.95 ATS-56L32G

Trans. of Angew[andte] Chem[ie] (West Germany) 1959, v. 71, no. 5, p. 176-182.
Another translation is available from LC or SLA mi$2.40, ph$3.30 as 59-15333 [1959] 18p.

Tilicheyev, M. D. and Polyakova, A. A.
THE DESTRUCTIVE HYDROGENATION OF n-HEPTANE AND OF n-HEXADECANE IN THE PRESENCE OF A NICKEL CATALYST. [1959] 10p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17421

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) [1958] v. 3, no. 1, p. 40-46.

Titov, A. I. and Shchitov, N. V.
MECHANISM OF NITRATION OF PARAFFINS AND CYCLOPARAFFINS WITH NITRIC ANHYDRIDE. [1959] 5p.
Order from ATS $7.50 ATS-76L32R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1951, v. 81, no. 6, p. 1085-1088.

Physical Chemistry

ZHURNAL FIZICHESKOY KHIMII (USSR) 1959, V. 33, NO. 3, P. 513-741 (Journal of Physical Chemistry). [1959] 1v. [SOV]-76-33-3-(1-41)/41.
Order from OTS $1.10, $6.00/6 mo. PB 141 072T-16
Foreign $1.35, $7.50/6 mo.

Consists of abstracts in English.

Atroshchenko, V. I. and Gavrya, N. A.
THE RATE OF SOLUTION OF METHANE AND NITROGEN-HYDROGEN MIXTURES IN CONDENSING AMMONIA. [1959] 7p.
Order from ATS $7.50 ATS-63L32R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 1, p. 99-104.

Avramenko, L. I. and Kolesnikova, R. V.
REACTIONS OF OXYGEN ATOMS WITH UNSATURATED HYDROCARBONS (Reaktsiy Atomov Kisloroda s Nepredel'nymi Uglevodorodami) tr. by D. A. Sinclair. 1959, 18p. 10 refs. Technical Trans. 789.
Order from NRCC NRCC TT-789

Trans. of Voprosy Khimicheskoy Kinetiki Kataliza i Reaktsionnoy Sposobnosti, Moscow, 1955, p. 7-17.

Experiments performed on ethylene, propylene, and butadiene by the method described in Doklady Akad. Nauk SSSR 92: 349, 1953 (a translation is available as NRC TT-761) permit these conclusions. An atom of oxygen can disrupt the double hydrogen bond in a single elementary event, with the formation of aldehyde (the preference being for higher aldehydes). An atom of oxygen may enter the C-H bond not only at the saturated but also at the unsaturated carbon atoms. From the fact that aldehyde and formaldehyde, in reactions of propylene with oxygen atoms, are formed in approximately the same quantities, it may be concluded that the probability of disruption of the single and double bonds is the same in each case. The ability of oxygen atoms to disrupt a double C C bond in a single act, to disrupt a single C-C bond with the formation of aldehyde groups, to introduce itself along the C-H bond, and to abstract two hydrogen atoms to form water, indicates that the oxygen atom utilizes by preference both its free valencies in reactions.

Babushkin, A. A. and Uvarov, A. V.
INVESTIGATION OF THE ADSORPTION AND SURFACE REACTIONS OF ETHYL ALCOHOL ON ALUMINUM OXIDE BY THE METHOD OF INFRARED SPECTROSCOPY. [1959] 5p. 14 refs.
Order from CCT $21.00 CCT-508TT

Trans. of [Akademiya Nauk SSSR. Doklady, 1956, v. 110, no. 4, p. 581-584].

Borin, A. V. and Pobedonostseva, I. A.
SPECTROPHOTOMETRIC INVESTIGATION OF DYE SOLUTIONS FORMING H-AGGREGATES. [1959] 18p. 14 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17603

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 4, p. 256-266.

The absorption spectra of dyes forming an H-band of absorption in aqueous gelatin solutions were investigated. The intensity of the H-band increases and reaches a maximum value when the concentration of gelatin in the solution is increased, while the value of the critical concentration of gelatin corresponding to the maximum intensity of the H-band depends upon the

degree of aggregation of gelatin. In solutions containing a less aggregated gelatin, the critical concentration corresponds to smaller values as compared with the solutions containing gelatin with a high degree of aggregation. It is suggested that the decrease in the critical concentration for less aggregated gelatin is determined by an increased adsorption capacity of micelles so that the concentration of dye adsorbed by gelatin micelles increases. When the concentration of gelatin is increased above the critical, the intensity of the H-band is decreased because of the increased concentration of the gelatin decomposition products which retard the adsorption of dye molecules on gelatin micelles or which have a peptizing effect on the dye so that the concentration of the molecular form of the dye in the solution increases at the expense of the H-aggregates. The replacement of hydrogen of the polymethine chain of the polymethine chain of thiacarbocyanine dyes by groups, which cause the destruction of the molecular planarity, makes the formation of the H-aggregates of dyes difficult.

Butt, Yu. M. and Rashkovich, L. N.
REACTION OF SILICA WITH CALCIUM AND MAGNESIUM HYDROXIDES UNDER HYDROTHERMAL CONDITIONS. [1959] 8p.
Order from ATS $7.75 ATS-35L33R

Trans. *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 6, p. 1186-1192.

Cherkesov, A. L.
HIGHLY SPECIFIC FLUORESCENT REACTION WITH ALUMINIUM (Spetsificheskaya Vysokochuvstvitel'naya Fluorestsentvaya Reak siya na Alyuminii). June 59 [5]p. 5 refs. RTS no. 1041.
Order from LC or SLA mi$1.80, ph$1.80 59-18159

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 118, no. 2, p. 309-311.
Another translation is available from CB $5.00 [1958] [3]p.

Chibisov, K. [V.].
SEVENTY-FIFTH BIRTHDAY OF PROFESSOR E. A. KIRILLOV. [1959] 4p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-17600

Trans. of Zhur[nal] Nauch[noy i] Priklad[noy] Fot[ografii i] Kinemat[ografii] (USSR) 1959, v. 4, no. 3, p. 237-238.

Damianovich, H[oracio].
THE CHEMISTRY OF HELIUM AND HELIUM COMPOUNDS; THE COMBINATION OF HELIUM WITH URANIUM BY CHEMICAL CATHODIC ACTIVATION AND THE THERMAL DECOMPOSITION OF THE COMPOUND FORMED. Apr 55 [7]p. 3 refs. A. E. R. E. Lib/Trans. 526.
Order from SLA mi$1.80, ph$1.80 59-17374

Trans. of Asociación Quimica Argentina. Anales, 1939, v. 27 [no. 139], p. 69-73.

Erdey, L., and Banyai, Eva.
REACTIONS D'ECHANGE PAR PRÉCIPITATION, tr. by Masour. 29 Jan 59, [30]p. Trans. no. A 515 (text in French).
Order from SLA mi$2.70, ph$4.80 CEA-tr-A515

Trans. in French of Z[eitschrift fur] Analyt[ische] Chem[ie] (West Germany) 1958, v. 161, no. 1, p. 16-28.

Fischer, L., Winkler, G., and Jander, G.
RECENT FINDINGS CONCERNING THE ELECTROCHEMISTRY OF NONAQUEOUS SOLUTIONS: CONDUCTANCES AND STANDARD POTENTIALS. [1959] 100p. 196 refs.
Order from SLA mi$5.40, ph$15.30 59-17801

Trans. of Z[eitschrift] f[ür] Elektrochemie (West Germany) 1958, v. 62 [no. 1] p. 1-28.

The bibliography upon which this survey is based is drawn primarily from German, English-language, and Scandinavian sources.

Gachkovskiy, V. F.
FLUORESCENCE SPECTRA OF PHOTOREDUCED FORMS OF CHLOROPHYLL AND PHEOPHYTIN. [1959] [8]p. 16 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17414

Trans. of *Biofizika (USSR) 1959, v. 4, p. 19-26.

The fluorescence spectra of the photoreduced forms of chlorophylls (a+b) and a, and pheophytins (a+b) and a, were examined. There was observed, at 2×10^{-5} molar concentration, an identity of fluorescence spectra of pheophytin (a+b) and a, and also of the photoreduced forms of chlorophyll (a+b) and a and pheophytin (a+b) and a. There was shown the transfer of energy in molecular solutions from pheophytin b and the photoreduced form of chlorophyll b and pheophytin b respectively to pheophytin a and the photoreduced forms of chlorophyll a and pheophytin a. The structure of the fluorescence spectra of the photoreduced forms was determined. In the spectra of the first (electrode-active) photoreduced forms of pheophytin (a+b) and two maxima were found, 662 and 733 mμ, practically coinciding in spectral position with the analogous (longwave) maxima of their second reduced forms, having three maxima at 643, 644 and 733 mμ. In the spectra of the second photoreduced forms of chlorophylls (a+b) and three maxima were observed, 620, 651 and 731 mμ. There was observed on lowering the temperature a sharp increase in intensity of the fluorescence maximum of the photoreduced forms of chlorophylls and pheophytins in the 730 mμ spectral region. The stated property differentiates this maximum from the other, shorter wavelength, fluorescence maxima in the spectra of the photoreduced forms, which remain practically unchanged with change in temperature.

Gärtner, K. and Griessbach, R.
SURFACE AREA AND PORE STRUCTURE OF SILICA GELS AS A FUNCTION OF THEIR PREVIOUS HISTORY. [1959] 9p.
Order from ATS $9.50 ATS-82L31G

Trans. of Kolloid-Z[eitschrift] (West Germany) 1958, v. 160, no. 1, p. 21-26.

Hiesinger, L. and Koenig, H.
OPTICAL AND STRUCTURAL PROPERTIES OF SPUTTERED FILMS WITH SPECIAL CONSIDERATION OF THE REACTION WITH THE RESIDUAL GAS. [1959] [8]p. (12 figs. omitted) 26 refs.
Order from SLA mi$1.80, ph$1.80 59-17805

Trans. of mono. [Festschrift 100 Jährigen Jubiläums W. C. Heraeus, G. m. b. H.] Frankfurt a. M. [1951, p. 376-392].

In the investigation here reported, thin oxide films of aluminum, iron, cadmium, titanium, silicon and thorium which had been produced by the sputtering technique were subjected to optical and electron microscope examination. Structure of the films was determined by electron diffraction pictures. The sputtered films are outstanding for their hardness and resistance to rubbing. Since films of any thickness and refractive index can be produced by this method, the range of applications in the field of optical devices is large.

Kazakov, A. V., Tikhomirova, M. M., and Plotnikova, V. I.
THE SYSTEM OF CARBONATE EQUILIBRIA (DOLOMITE, MAGNESITE). [1958] 53p.
Order from ATS $56.25 ATS-57K26R

Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Geol[ogicheskikh Nauk]. Trudy, 1957, no. 152. Grol[ogicheskaya] Ser[iya] no. 64, p. 13-58.

Krasil'nikov, V. Ya.
DIELECTRIC PERMITTIVITY AND DIPOLE MOMENTS OF SOME ORGANIC SUBSTANCES (Dielektricheskiye Pronitsayemosti i Dipol'nyye Momenty Nekotorykh Organicheskikh Veshchestv) tr. by G. Belkov. 1959, 22p. 11 refs. Technical Trans. 794.
Order from NRCC NRCC TT-794

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1944, v. 18, no. 3, p. 174-182.

Isotherms were determined for the dielectric permittivity of the allyl mustard oil-diethyl aniline and alyl mustard oil-ethyl aniline systems. The dipole moment was determined for diethyl aniline with respect to solutions in benzene and for thymol with respect to benzene and carbon tetrachloride. Results confirmed the Il'in theory concerning surface tension. The dipole moment was also determined for allyl-phenyl-ethyl thiourea and tin chloride etherate; the slope of the polarization isotherms obtained confirmed the explanation which gives an increase in viscosity of rational systems at the singular point.

Krasnovskiy, A. A.
LUMINESCENCE OF CHLOROPHYLL AND PHOTOSYNTHESIS. [1959] [21]p. 77 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-17413

Trans. of *Biofizika (USSR) 1959, v. 4, p. 3-18.

A review is presented of the known data about the luminescence of chlorophyll in the chemically individual form and in the natural state of combination. About half of the references cited are Soviet.

Krasnovskiy, A. A. and Umrikhina, A. V.
USE OF BIVALENT IRON COMPOUNDS AND ASCORBIC ACID AS ELECTRON DONORS IN PHOTOCHEMICAL REACTIONS OF PORPHYRINS AND CHLOROPHYLL IN AQUEOUS MEDIA. [1959] [6]p. 17 refs. No. 178
Order from LC or SLA mi$1.80, ph$1.80 59-17410

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 122 [no. 6] p. 1061-1064.

Lesokhina, G. F., Podurovskaya, O. M. and Gol'bert, K. A.
ADSORPTION OF A MIXTURE OF VAPORS ON POROUS ADSORBENTS. 11 Aug 59, 11p. (1 fig. omitted) 5 refs. JPRS: L-898-N.
Order from OTS $0.50 59-13783

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1948, v. 22, no. 8, p. 961-967.

Meyklyar, P. V.
WORK OF SOVIET SCIENTISTS IN THE FIELD OF THE EFFECT OF LIGHT ON SILVER HALIDE CRYSTALS. [1959] 23p. 104 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-17636

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1957, v. 2, no. 5, p. 389-399.

Myasnikov, I. A.
ELECTROCONDUCTIVITY OF n-SEMICONDUCTORS BY CHEMISORPTION OF ATOMS AND RADICALS [Elektroprovodnost' n-poluprovodnikov pri Khemosorbtsii Atomov i Radikalov]. [1959] 10p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17405

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 120, no. 6, p. 1298-1301.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-14627, 26 Sep 59, 9p.

Atomic hydrogen, nitrogen, and methyl radicals were adsorbed by ZnO and TiO_2 films and the resulting changes in electrical conductivity were noted. The processes of chemisorption, with the subsequent ionization, proceeded with activation energies from 2 to 5 kcal lower than the corresponding processes for molecules. In the case of chemisorption of C_2H_4, the change in conductivity was slight; it was practically nonexistant in the N_2 case.

Nikitin, Ye. N.
APPLICATION OF SORPTION METHOD TO THE STUDY OF THE INTERACTION OF ZIRCONIUM OXIDE WITH THE OXIDES OF CALCIUM AND MAGNESIUM. Feb 55 [5]p. 10 refs. AERE Lib/Trans. 466.
Order from SLA mi$1.80, ph$1.80 59-17320

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1954, v. 94, no. 5, p. 919-921.

Ravich, M. I., Itkina, L. S., and Kokhova, V. F.
THE EXISTENCE OF THE EQUILIBRIUM SOLID PHASE K_2CO_3. NA_2CO_3 IN THE SYSTEM K_2CO_3-NA_2CO_3-H_2O AT TEMPERATURES ABOVE 100°. [1959] 12p.
Order from ATS $15.60 ATS-80L32R

Trans. of Akad[emiya] Nauk SSSR. Sektor Fiz[iko]-Khim[icheskogo] Anal[iza]. Izvest[iya] 1954, v. 25, p. 350-360.

Schindewolf, U.
LIQUID ANION EXCHANGERS. Feb 59, 15p. (7 figs. omitted) 8 refs. NP-tr-254.
Order from SLA mi$2.40, ph$3.30 59-17585

Trans. of Zeitschrift für Elektrochemie (West Germany) 1958, v. 62, no. 3, p. 335-340.

The solution of the hydrochloride of an organic, long-chain amine in a solvent immiscible with water (liquid anion exchanger) behaves like a solid anion exchanger. Like the latter, the liquid anion exchangers absorb or extract anionic chloro complexes of many metals very selectively from chloride-containing electrolytes. The form of the distribution curve (distribution coefficient plotted against activity of the chloride-containing carrier electrolyte) is determined by the reaction in the aqueous phase which forms the absorbed complex, and by the exchange reactions in the organic phase. The electrolyte effect (deviation from ideal behaviour) observed with solid anion exchangers also arises with liquid ones. Variation of the amine concentration in the organic phase enables the influence of active groups on ion exchange to be studied very simply. (Author's abstract)

Schulze, H.
IONIC CONDUCTIVITY OF THE MIXED SYSTEM KCl-KBr AND OF KCl WITH TRIVALENT ADDITIONS. Mar 55 [7]p. 8 refs. AERE Lib/Trans. 523.
Order from SLA mi$1.80, ph$1.80 59-17344

Trans. of Thesis, Göttingen U., 1955.

Shtifman, L. M.
ELECTROCAPILLARY CURVES OF MERCURY IN THE PRESENCE OF POLYVALENT CATIONS. 21 Jan 59, 7p. 3 refs. TS-39.
Order from LC or SLA mi$1.80, ph$1.80 59-16743

Trans. of A[kademiya] N[auk] [S]SSR. Doklady, 1948, v. [6] 3, no. 6, p. 709-712.

Strokov, F. N., Musyakov, V. A. and others.
NATURE OF ALUMINATE SOLUTIONS BASED ON THE STUDY OF THEIR PHYSICAL CONSTANTS AND DIALYSIS (Priroda Alyuminatnykh Rastvorov na Osnove Izucheniya Fizicheskikh Konstant i Dializa ikh). [1959] [37]p. 15 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-16381

Trans. of Gosudarstvennyy Institut Prikladnoy Khimii. [Trudy] (USSR) 1940, v. 32, p. 95-114.

A comparison of the physical properties of commercial aluminate solutions with the physical properties of mixtures of electrolytic solutions (Na_2CO_3 and NaOH) reveals an obvious analogy in the dynamics of change in these properties as a function of their composition. This proves that there are no basic differences between the structure of alkaline aluminate solutions and sodium-alkaline solutions. Aluminate solutions must, therefore, be classified as true (ionic) solutions. In the dialysis of aluminate solutions, crystalloid sodium aluminate was present in all concentrations tested and at all values of the alkaline coefficients. Na_2O, SiO_2, and CaO are among the substances present during the primary as well as the secondary solid phases. The crystallization of small amounts of sodium hydroaluminates from aluminate solutions was confirmed by analysis of the balance of the solid phase and its wash water.

Ternisien, Jean A.
CATALLURGY (Catallurgie). [1958] [29]p. 23 refs.
Order from SLA mi$2.70, ph$4.80 59-10296

Trans. of Genie Chimique (France) 1958, v. 80, no. 4, p. 98-106.

In this general review, catallurgy is defined as the sum of the theories, experiments and processes controlling heterogeneous catalysis with a solid catalyst as a contact body. The catalysts may be metals, semi-conductors or insulators. The probable paths of development of the science of catallurgy are outlined.

Tertian, Robert and Papée, Denis.
THERMAL AND HYDROTHERMAL TRANSFORMATIONS OF ALUMINA. [1959] [36]p. 36 refs.
Order from SLA mi$3.00, ph$6.30 59-17445

Trans. of Journal de Chimie Physique (France) 1958, v. 55, no. 5, p. 341-353.

This paper deals with thermal and hydrothermal transformations of alumina, beginning with the principal crystallized hydrates. The preparation and composition of the initial hydrate, the mechanics of decomposition and the sequences of dehydration as a function of experimental conditions are discussed. The results of these observations are reported with a description of a series of experiments where the group of aluminum hydroxides and pseudoanhydrous alumina was produced from a single specimen of hydrargillit of fine crystals. The paper concludes with a table of revised X-ray diffraction data showing the characteristics of the principal forms of transition.

Tomassi, W. and Houwalt, A.
POTENTIALS OF METALLIC ELECTRODES IN PURE WATER. [1959] [12]p. 27 refs.
Order from SLA mi$2.40, ph$3.30 59-17783

Trans. of Przemysl Chemiczny (Poland) 1957, v. 13 [no. 2] p. 82-87.

Potentials of mercury and platinum electrodes were measured in pure water. The electrodes were platinum plates covered with platinum black of various degrees of subdivision, smooth platinum wires, and the same wires coated with platinum black. The electrodes were tested in deaerated water and in air-saturated water. The results obtained show that both mercury and platinum electrodes in pure water behave like oxide electrodes and assume a potential corresponding to the molar activity of hydroxyl ions.

Topchiyev, A. V., Alaniya, V. P. and Chernyi, G. I.
THE REACTION OF OLEFINS WITH AMMONIA IN THE PRESENCE OF OXIDE CATALYSTS. [1959] 3p.
Order from ATS $3.75 ATS-42L32R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 125, no. 4, p. 829-830.

Tovbin, M. V. and Grinberg, A. D.
DESORPTION DYNAMICS WITH POROUS ADSORBENTS. 25 May 59, 17p. (4 figs. omitted) 12 refs. JPRS: L-792-N.
Order from OTS $0.50 59-13536

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1954, v. 28, no. 10, p. 1755-1764.

Ussanowitsch, M.
THE ELECTRICAL CONDUCTIVITY OF THE SYSTEM: ARSENIC TRIBROMIDE-ETHYL ETHER, tr. by R. J. Richardson. 1955 [10]p. 17 refs. A. E. R. E. Lib/Trans. 611.
Order from SLA mi$1.80, ph$1.80 59-17528

Trans. of Zeitschrift für Physikalische Chemie [Leipzig] (Germany) 1926, v. 124, p. 427-435.

The specific conductivity of the system $AsBr_3$-ether in the concentration range of from 0 to 100% has been measured. It rises to a maximum value of $k = 4 \times 10^{-4}$ at a concentration of about 95% $AsBr_3$ and then falls quickly to the true conductivity of pure $AsBr_3$ ($k = 1.6 \times 10^{-6}$). A simple method is proposed for the fractional freezing out of hygroscopic substances which are decomposed by water. The temperature coefficient of the conductivity of the system studied is positive for high concentrations, falls at first to zero on dilution and then becomes negative. Electrolysis was carried out and As quantitatively determined. The molar conductivity of the system has been given. The course followed by the conductivity with dilution is anomalous when referred to $AsBr_3$ as electrolyte; it is, however, normal when referred to ether as electrolyte. (Author's summary)

Ussanowitsch, M.
ELECTROCHEMICAL INVESTIGATIONS ON ETHEREAL SOLUTIONS. II. THE SYSTEM: ARSENIC TRICHLORIDE-DIETHYL-ETHER, tr. by F. Hudswell. 1955 [9]p. 4 refs. A. E. R. E. Lib/Trans. 640.
Order from SLA mi$1.80, ph$1.80 59-17552

Trans. of Zeitschrift für Physikalische Chemie [Leipzig] (Germany) 1929, v. 140A, no. 5/6, p. 429-434.

The electrical conductivity of the system arsenic trichloride-ethyl ether has been measured in the concentration range from 1% to 100% $AsCl_3$. An appreciable conductivity ($\kappa \sim 1.10^{-6}$ can first be detected at a concentration of about 40% $AsCl_3$; the specific conductivity increases with the concentration, and passes through a maximum at 94% $AsCl_3$ (about 86 mols per cent and then decreases steeply to the self-conductivity of arsenic trichloride. The temperature coefficient of the electrical conductivity is negative for all concentrations. The decomposition potential of a 68.81 per cent solution of $AsCl_3$ in ether at 18° was equal to 1.22 volts. Arsenic is deposited at the cathode in the course of electrolysis in accordance with the Faraday law. The molecular electrical conductivity, in respect to $AsCl_3$, changes anomalously with the dilution; however, if this is related to the ether as the electrolyte, then there appears a constant increase with dilution. The curves for the specific and molecular electrical conductivity have trends similar to those in the system $AsBr_3$ - $(C_2H_5)_2O$. (Author's summary)

Wippler, C.
CROSSLINKING OF POLYVINYL CHLORIDE UNDER THE INFLUENCE OF IONIZING RADIATION. [1959] [15]p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-15915

Trans. of [Journal of Polymer Science (U. S.) 1958, v. 29, p. 584-594].

Yevstigneyev, V. B.
NATURE OF ELEMENTARY PHOTOREACTIONS OF CHLOROPHYLL. [1959] [8]p. 18 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17415

Trans. of *Biofizika (USSR) 1959, v. 4, p. 124-128.

A polemic is presented against a previous article by V. F. Gachkovskiy (Biofizika 2: 756, 1957). (See also 59-17414)

Yevstigneyev, V. B.
PHOTOREDUCTION MECHANISM OF CHLOROPHYLL AND ITS SENSITIZING EFFECT. [1959] [15]p. 40 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17412

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32 [no. 5] p. 969-980.

Results are summarized of studies of the mechanism of reversible photoreduction of chlorophyll and its analogs in the dissolved state. By use of the spectrophotometric and electrometric methods of study, and

partially by use of the deuterium isotope of hydrogen, it was shown that this reaction takes place in two steps. As a result of the first (purely photochemical) step there is created an extremely labile, very reactive electrode-active first reduced form of the pigment, having the properties of a free radical, an ionized semiquinone. The second (dark) step gives rise to a second reduced form, resulting from the participation of a proton. It was shown by direct experiments that reactions sensitized by chlorophyll and its analogs proceed through the stage of creation of the first reduced form of the pigment sensitizer, with its subsequent reaction with an electron acceptor. The data obtained favor the hypothesis of a chemical "reduction" mechanism for the participation of chlorophyll in the photosynthetic process.

Yevstigneyev, V. B., Gavrilova, V. A., and Savkina, I. G.
PHOTOREDUCTION OF BILIRUBIN AND PROTOPORPHYRIN IN CONNECTION WITH THE STUDY OF CHLOROPHYLL PHOTOREDUCTION. [1959] [5]p. 16 refs. No. 184.
Order from LC or SLA mi$1.80, ph$1.80 59-17416

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 124 [no. 3] p. 691-694.

Zadumkin, S. N.
SURFACE TENSION AND HEAT OF EVAPORATION OF METALS. [1959] 5p. 9 refs.
Order from CCT $20.00 CCT-222TT

Trans. of [Akademiya Nauk SSSR. Doklady] 1953, v. 92, no. 1, p. 115-118.

The formula
$\sigma = \left[(\alpha L f_{kv/2} f_s)/(f_{kv} f_{ks})\right] \left[(\beta^2/k)^{1/3} (D/A f_v)^{2/3}\right]$
is derived for the approximate evaluation of the coefficient of surface tension of metals. Here L is the molar heat of sublimation, $f_{kv/2}$ is the coordination number of the surface layer, f_{kv} is the volume coordination number, f_{ks} is the number of neighbors of a particle in the lattice plane situated at a distance less than the lattice unit a, f_s is the number of particles in a planar cell, k is dependant upon the type of lattice, $\beta = C/a$ where C is the height of the elementary cell, D is the metal density, f_v is the number of particles in the volume of the elementary cell, and A is the atomic weight. The constant $\alpha = 1032$ and contains Avogadro's number.

Zhuze, T. P. and Safronova, T. P.
THE SOLUBILITY OF NATURAL GAS COMPONENTS IN CRUDE OILS AT HIGH PRESSURES AND TEMPERATURES. [1959] 11p. 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17739

Trans. of Akad[emiya] Nauk SSSR. Otdel[eniye] Tekh[nicheskikh] Nauk. Izv[estiya] 1958, no. 3, p. 104-108.

The solubility of the individual components of natural gas in crude oils is examined, and the influence of the nature of the gas and of the oil on this solubility is discussed.

EARTH SCIENCES

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR, GEOCHEMISTRY SECTION, 1958, VOLS. 122-123, NOS. 1-6, P. 83-98. 1959 [20]p.
Order from CB $25.00/year

Trans. of Akademiya Nauk SSSR. Doklady [Geokhimiya] 1958, v. 122-123, nos. 1-6.

Contents:
Hydrothermal acid-alkaline differentiation, by D. S. Korzhinskii
The isotopic composition of natural phosphates, by R. V. Teis, T. S. Gromova and S. N. Kochetkova
Some data on the content and distribution of iron in the Black Sea, by M. A. Dobrzhanskaia and T. I. Pshenina

Chekin, B. S.
ON THE CHANGE OF THE "FORM" OF WAVE DURING REFLECTION AND REFRACTION. [1959] 11p. 5 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17778

Trans. of Akad[emiya] Nauk SSSR. Izv[estiya]. Ser[iya] Geofiz[izicheskaya] 1957, no. 4, p. 449-457.

The change of the form of wave, occurring at a complete internal reflection on a plane boundary of two media or at a passage of the waves through a plate is considered. Media in which only longitudinal waves propagate are discussed. The problem is examined for plane waves. Some new formulae for waves of a smooth character and for waves showing concentrated excitation are presented.

Matveyev, B. K.
DETERMINATION OF THE VELOCITY AND DIRECTION OF FLOW OF GROUND WATERS FROM THE DATA OF A SINGLE WELL. [1959] 5p.
Order from ATS $9.65 ATS-81L31R

Trans. of Razvedka i Okhrana [Nedr] (USSR) 1958, v. 24, no. 12, p. 44-47.

Yerofeyev, E. A.
METHOD FOR DETERMINING SPECIFIC GRAVITY OF MINERALS BY VELOCITIES OF FALLING PARTICLES IN VISCOUS MEDIUM (Metodika Opredelenija Udelnogo Vesa Mineralov po Skorosti Padenija Mineralnich Chastiz v Vjazkoj Srede) tr. by C. C. Popoff. [1959] [28]p. 6 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-18354

Trans. of Razvedka i Okhrana Nedr (USSR) 1959 [v. 25] no. 2, p. 12-25.

A method, based on the Stokes principle of free fall of mineral particles of definite dimensions in a viscous liquid, is proposed for calculating specific gravity of minerals under field conditions. Sunflower oil appears to be the most suitable viscous liquid. Tests indicates that the method is accurate to within 0.5 units of specific gravity.

Climatology and Meteorology

Berger-Landefeldt, U.
DETERMINATION OF EVAPOTRANSPIRATION BY THE EXCHANGE METHOD (Beitrlge zur Messung der Evapotranspiration nach dem Austauschverfahren). [1959] [39]p. 62 refs. Trans. no. 3023.
Order from SLA mi$3.00, ph$6.30 59-15297

Trans. of Archiv flir Meteorologie, Geophysik und Bioklimatologie. Series B: [Allgemeine und Biologische Klimatologie] (Austria) 1953, v. 5, no. 1, p. 66-102.

Freydzon, A. L.
HANDBOOK OF SHORT-RANGE WEATHER FORECASTS. 5 Dec 58, 9p. 1 ref. (1 fig leguation, 1 formula omitted) JPRS/NY-L-538.
Order from OTS $0.50 59-11171

Trans. of Meteorologiya i Gidrologiya (USSR) 1958, no. 4, p. 53-56.

The USSR Handbook on Short-range Weather Forecasts is examined from the point of view of the practical synoptic meteorologist, and the most substantial shortcomings are clarified, with proposals for a revision of the text.

Lu, Chiung, and Wan, Min-wei.
THE CLIMATIC TYPES OF FLOODS AND DROUGHTS IN THE VALLEYS OF THE YANGTZE AND THE HUAI RIVERS. 2 June 59, 19p. (10 maps omitted) 5 refs. JPRS: 1621-N.
Order from OTS $0.50 59-13553

Trans. of Ti-li Hsueh-pao (Chinese People's Republic) 1955, v. 21, no. 3, p. 245-257.

Yang, Wen.
ENLARGED COUNCIL MEETINGS [NOS. 2 AND 3] OF THE METEOROLOGICAL SOCIETY OF CHINA. 6 May 59, 6p. JPRS: L-772-N.
Order from OTS $0.50 59-13489

Trans. of K'o Hsueh T'ung Pao (Chinese People's Republic) 1958, no. 16, p. 505-506.

The aims are reviewed that were adopted at the Second and Third Enlarged Council Meetings held on August 5 to 12 in Tsingtao. These included (1) achieving the main line of Socialism, "which, if done with an indomitable effort and a will to forge ahead, might be attained in accordance with the principle of 'more, better, faster and cheaper'", (2) speeding up the technical and cultural revolutions, (3) consolidation and exchange of the experiences gained while assisting the construction of Socialism, (4) assisting the government to solve scientific and technical problems relating to meteorology, (5) the promotion and organization of academic activities relating to meteorology, and (6) the following of the practices of the Soviet Union. Although it is announced that forty papers were read and discussed at the meetings, only the opening speech given by K'o-chen Chu, Deputy Director of the Academia Sinica and Chairman of the Board of Trustees of the Meteorological Society of China, and the paper given by Chiu-chang Chao, an executive trustee of the Society, are briefly summarized and the titles are given of papers read by comrade Wen-kuang T'an of the Chen-hsiung weather station in Yunnan and comrade Chang-feng Hsieh of the Yu-lin weather station in Kwangsi. The meetings also "lodged their most severe and righteous protest against the American imperialists who, in a series of tests of nuclear weapons in the Pacific, made use of the southeast monsoon to carry the minute radioactive dust particles to China, Korea, Japan and other countries..."

Geodesy

GEODEZIYA I KARTOGRAFIYA (USSR) 1959, NO. 4, P. 3-90 (Geodesy and Cartography). [1959] [22]p. SOV-6-59-4-(1-20)/20.
Order from OTS $0.60, $3.50/6 mo. PB 141 001T-15
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Bosse, H. and Hoelzel, F.
NIEDERDOLLENDORF SEMINAR. [1958] 6 Jan 59, 4p. JPRS L-1364-D.
Order from OTS $0.50 59-11402

Trans. of Kartographische Nachrichten (West Germany) 1958, v. 8, no. 3, p. 69-70.

Goals and accomplishments are reviewed of the 1958 seminar entitled "Terrain Representation" which was held in Niederdollendorf from May 4 to 11 by the Practical Cartography Working Group. Topics of the papers read at the report are not given.

Carlberg, B.
GEOGRAPHIC-MORPHOLOGICAL REQUIREMENTS FOR TERRAIN REPRESENTATION. 6 Jan 59, 17p. 11 refs. JPRS L-1367-D.
Order from OTS $0.50 59-11405

Trans. of Kartographische Nachrichten (West Germany) 1958, v. 8, no. 3, p. 82-90.

A lecture.

Gottlass, E.
TERRAIN REPRODUCTION, THE SCANNING OF HALFTONE DRAWINGS. 6 Jan 59, 12p. 2 refs. JPRS L-1368-D.
Order from OTS $0.50 59-11414

Trans. of Kartographische Nachrichten (West Germany) 1958, v. 8, no. 3, p. 109-116.

A lecture.

Gromov, S. V.
ON THE PROBLEM OF THE JOINT DETERMINATION OF THE MASS AND SHAPE OF THE EARTH BY ASTRONOMIC, GEODETIC AND GRAVIMETRIC DATA. 9 June 59, 11p. 7 refs. JPRS: L-1693-D.
Order from OTS $0.50 59-11639

Trans. of Leningrad U. Vestnik (USSR) 1959, no. 1, p. 111-118.

It is assumed that the distance of ζ, the surface point of the quasigeoid, from the surface of the regular ellipsoid E with a mass equal to that of the whole earth with a small axis, coaxial with the revolution of the earth, and a center of gravity coinciding with the center of inertia of the earth, can be expressed by $=P1/(4\pi R\gamma) - (g-\gamma) (S(\psi) - 1/2)d\sigma$. Here g is the observed value of the acceleration of the force of gravity at a point on the physical surface of the earth; γ is the normal value of the acceleration of the force of gravity at the corresponding point of the supplementary surface, which is obtained by extending the supplementary altitudes from the surface E in the direction of the normal to E; γ_0 is the value of γ at the corresponding point on the surface of ellipsoid E; R is the mean radius of the earth; $S(\psi)$ is the Stokes function; σ is the sphere of radius R; and ψ is the angular distance between two points on the sphere. The effect of inaccurate knowledge of the earth's mass upon ζ and the supplementary altitude, the correction of the product of the Newtonian gravity constant and the earth's mass in the joint use of gravimetric and astronomic-geodesic data, and the form and dimensions of the general terrestial ellipsoid are determined.

Knaeble, A.
THE TOPOGRAPHIC TERRAIN SURVEY AS PREREQUISITE FOR CARTOGRAPHIC TERRAIN REPRESENTATION. 19 Jan 59, 7p. JPRS L-1366-D.
Order from OTS $0.50 59-11404

Trans. of Kartographische Nachrichten (West Germany) 1958, v. 8, no. 3, p. 79-82.

A lecture.

Poehlmann, G.
CURRENT METHODS AND PROCEDURES OF TERRAIN REPRESENTATION. 6 Jan 59, 17p. 11 refs. JPRS L-1365-D.
Order from OTS $0.50 59-11403

Trans. of Kartographische Nachrichten (West Germany) 1958, v. 8, no. 3, p. 71-79.

A lecture.

Schmidt, H.
COLORED TERRAIN REPRESENTATION. 9 Jan 59, 20p. 18 refs. JPRS L-1362-D.
Order from OTS $0.75 59-11393

Trans. of Kartographische Nachrichten (West Germany) 1958, v. 8, no. 3, p. 98-109.

A lecture.

Toschinski, E.
AREA GENERALIZATION IN TOPOGRAPHIC MAPS. 19 Jan 59, 15p. (4 figs. omitted) 3 refs. JPRS L-1363-D.
Order from OTS $0.50 59-11394

Trans. of Kartographische Nachrichten (West Germany) 1958, v. 8, no. 3, p. 90-98.

A lecture.

Geography

ARCTIC AND ANTARCTIC. 13 Apr 59, 25p. 11 refs. JPRS: 651-D.
Order from OTS $0.75 59-11505

Consists of selected translations from Soviet-bloc International Geophysical Year literature.

Contents:
New data on the geomorphology of eastern Antarctica, by P. S. Voronov
Distribution of magnetic disturbances in the Antarctic, by A. P. Nikol'skiy
The use of dry ice for dispersing clouds in the Arctic, by A. I. Voskresenskiy, V. G. Morachevskiskiy, and V. Ya. Nikandrov
Experience of using empirical functions of control for forecasting tropopause location, by Yu. N. Volkonskiy

BY RADIO FROM THE ANTARCTIC (Po Radio iz Antarktiki). 14 July 59, 23p. JPRS: L-878-N.
Order from OTS $0.75 59-13714

Trans. of unidentified Russian typescript.

Activities of the Third Continental Antarctic Expedition during the period September-November 1958 are described by the expedition chief, Ye. I. Tolstikov.

Huang, Hsiao-k'uei and Wang, An-ch'iu.
SOIL GEOGRAPHY OF THE YELLOW RIVER FLOODPLAIN. 29 July 59, 36p. (1 fig. omitted) 4 refs JPRS: 840-D.
Order from OTS $1.00 59-11734

Trans. of Ti-li Hsueh-pao (Chinese People's Republic) 1954, no. 3, p. 313-329.

The floodplain section along the Yellow River pertains to a large area of more than 20,000 square kilometers in eastern Honan and northern Anhwei that was flooded regularly by the Yellow River for nine years from 1938 when the Chiang bandit regime broke the dikes at Hua-yuan-k'ou until 1947 when the break was

repaired and the Yellow River followed its old course again. This flooding by the Yellow River changed the original soil and its fertility, while creating new problems at the same time. From September 1950 to January 1951, the authors joined the survey unit organized by the Chinese Academy of Sciences to observe the floodplain of the Yellow River, and approached the area between Pang-fu and Hua-yuan-k'ou from different directions while making a detailed survey of areas around Cheng-yang-kuan, Chou-k'ou, etc. A brief report of important observations made on this field trip is now presented. (Extracted from author's preface)

Kastal'skiy, B. N.
THE GEOGRAPHY AND HISTORY OF THE SHIRABAD AND SURKHAN VALLEYS. [1959] 67p. 6 refs.
Order from LC or SLA mi$4.90, ph$10.80 59-17395

Trans. of Vestnik Irrigatsii (USSR) 1930 [v. 8] no. 2, p. 64-88.

Shih, Ya-feng and Ch'en, Shu-p'eng
A PROFILE OF THE TA-PIEH SHAN AREA.
29 July 59, 21p. 3 refs. JPRS: 841-D.
Order from OTS $0.75 59-11735

Trans. of Ti-li Hsueh-pao (Chinese People's Republic) 1954, no. 3, p. 333-344.

Information obtained en route from Huo Shan in Anhwei Province to Lo-t'ien in Hupeh Province, is presented. Topics include topography, forests and forest products, soil erosion and conservation of soil and water, and economic ties of the Ta-pieh Shan with outside regions.

Geology

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOLOGICHESKAYA, 1959 [V. 24] NO. 6, P. 3-128 (News of the Academy of Sciences of the USSR. Geology Series). [1959] [20]p. SOV-11-59-6-(1-15)/15.
Order from OTS $0.50, $3.00/6 mo. PB 141 005T-16
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

Gzovskiy, M. V.
THE MODELING METHOD IN TECTONOPHYSICS (Metod Modelirovaniya v Tektonofizike) tr. by E. R. Hope. 1959, 16p. 59 refs. Technical Trans. 806; NRCC C-3001; T 311 R.
Order from NRCC NRCC TT-806

Trans. of Sovetskaya Geologiya [Sbornik Statei] (USSR) 1958, no. 4, p. 53-72.
Another translation is available from LC or SLA mi$2.70, ph$4.80 as 59-15575 [1959] [27]p.

The properties, which models for simulating natural geological structures should have, can be defined by the theory of physical similitude and by available information regarding the mechanical properties of rocks. By means of tests with models, laws and supplementary facts have been established which in natural geological structures it would be either highly laborious or impossible to detect. This applies primarily to the study of structural details of the earth's crust down to great depths, to tracing the history of the development of deformations and faults throughout very long periods of time, to studying the stressed state of the crust, and to determining the physical conditions for the occurence of deformations and faults of definite types. Consequently, modeling is a technique capable of advancing the solution of various geological and geophysical problems. (Paper read at the Eleventh General Assembly of the International Geodetic and Geophysical Union in 1957).

Mel'nichuk, M. I.
EXPERIMENT IN MEASURING SECOND DERIVATIVES OF THE MAGNETIC POTENTIAL OF BODIES. 10 Mar 59, 11p. (2 figs. omitted)
JPRS: L-681-N.
Order from OTS $0.50 59-13281

Trans. of Razvedka i Okhrana Nedr (USSR) 1958 [v. 24] no. 9, p. 26-32.

The Chair of Geophysics of the Leningrad (sic: L'vov) Polytechnical Institute carried out experiments on the utilization of second derivatives (gradients) of the magnetic potential of ore bodies for the solution of problems in geological prospecting. The magnetometer MP-1, devised by the Ural Branch of the Academy of Sciences Ukr. USSR was used in the experiments. Detailed analytical calculations, as well as a description of the proceeding, are given. It was found that the method of gradients could be used for a detailed prospecting for minerals when the perturbing body is at shallow depths. Its dimensions and location as to depth can be determined by the degree of the decrease of the gradient. This method is especially important for the prospecting of geologically complex ore fields, where the presently used method of magnetic prospecting does not give positive results.

Polkanov, A. A.
ON POSSIBLE "HINDRANCES" TO THE ARGON METHOD OF DETERMINING THE AGE OF MINERALS AND ROCKS. [1958] 5p. GSC Trans. no. 2.
Order from SLA mi$1.80, ph$1.80 59-10531

Trans. of Session of the Commission on the Determination of the Absolute Age of Geological Formations (no. 4) [12-14 May 55]. Transactions, p. 196ff, and Session of the Commission on Absolute Age (no. 7) 8-12 May 58 (Selections from Geblchimiya (USSR) 1958, no. 5)

Reinhold, Th.
THE MECHANISM OF SEDIMENTATION ON TIDAL FLATS. [1959] 10p.
Order from ATS $15.80 ATS-47K27DU

Trans. of Mededel[ingen van de] Geol[ogische] Sticht[ing] (Netherlands) 1948/1949, no. 3, p. 75-80.

Tarkhov, A. G.
GEOPHYSICAL METHODS OF PROSPECTING AND EXPLORATION. 4 Dec 58 [25]p. 13 refs.
JPRS: L-546-N.
Order from OTS $0.75 59-11183

Trans. of Izvestiya Vysshikh Uchebnykh Zaveneniy. Geologiya i Razvedka (USSR) 1958, no. 1, p. 107-123.

Oceanography

OCEANOGRAPHICAL OPERATIONAL CONFERENCE OF THE ACADEMIA SINICA. 3 Aug 59, 3p.
JPRS: L-1816-D.
Order from OTS $0.50 59-11747

Trans. of K'o-hsueh Tiung-pao (Chinese People's Republic) 1959, no. 3, p. 98-99.

Progress in marine physics, geology and topography in China which replaces "the original blank page" in this field of scientific endeavor is reported. Reference is made to "earthenware fertilizing" and "soaking fertilizing" methods in cultivation of algae in the north. The low temperature method used in raising young algae sprouts has prolonged the life of seaweed and raised production by 50%. The experiment of moving algae to the south has also been successful.

Karrer, F. and Sinzow, J.
OCCURRENCE OF THE FORAMINIFER GENUS NUBECULARIA IN THE SARMATIAN SANDS OF KISHINEV. [1958] 10p.
Order from ATS $10.95 ATS-28K24G

Trans. of Akad[emie der] Wiss[enschaften, Vienna] Math[ematische]-Naturw[issenschaftliche] Kl[asse]. Sitz[ungsberichte] Abt. I. (Austria) 1876, no. 1-5, p. 272-284.

ENGINEERING

Khristiyanovich, S. A., Zheltov, Yu. P. and Barenblatt, G. I.
MECHANISM OF HYDRAULIC FORMATION FRACTURING. [1959] 11p.
Order from ATS $13.65 ATS-68L32R

Trans. of Neftyanoye Khoz[yaystvo] (USSR) 1957, v. 35, no. 1, p. 44-53.

Panov, M. P., Ivanitskiy, Ye. A. and others.
THE FORMATION OF VERTICAL FRACTURES DURING HYDRAULIC FRACTURING (CONCLUSION). [1959] 5p.
Order from ATS $7.15 ATS-04L33R

Trans. of Neftyanoye Khoz[yaystvo] (USSR) 1958, v. 36, no. 10, p. 39-43.

See 59-14463

Aeronautical Engineering

Leclerc, J.
RESEARCH INTO THE BEST EXCITATION FOR THE NATURAL MODES OF A STRUCTURE (Recherche de la Meilleure Excitation des Modes Propres d'Une Structure) tr. by W. F. Fielding. Oct 58, 11p. 2 refs.
Library Trans. no. 784.
Order from SLA mi$2.40, ph$3.30 59-10324

Trans. from O[ffice] N[ational d'É[tudes et de] R[echerches] A[éronautiques]. Memo Technique (France) 1958, no. 1.

A general method for exciting a structure by means of several electrodynamic exciters placed on the airfoil is presented, after analysis of the accuracy ordinarily obtained in ground tests with a reduced number of exciters. The damping of the structure can then be introduced into flutter calculations. An editorial note indicates that there were a number of errors in the writing of the symbols in the original paper, and that although corrections have been made, there is no assurance that all is now in order.

Sänger, E. and Sänger, I.
TECHNICAL ASPECTS, tr. by A. J. A. [1958] [25]p.
Order from SLA mi$2.70, ph$4.80 59-10297

Trans. of Forschungsinstitut für Physik der Strahlantriebe. Mitteilungen (West Germany) 1957, no. 12, p. 27-40.

Present developments and potentialities of supersonic flight and space flight are considered. It is stated that manned aircraft will approach the speed of light around the turn of the century. Reference is made to military developments, and to such interceptors as anti-missile missiles and UV searchlights. The position of West Germany in defense and air research is briefly mentioned, with some figures on budgets.

Chemical Engineering

SOVIET RUBBER TECHNOLOGY, 1959, NO. 1, P. 1-64. June 59, 64p.
Order from MACL $50.00/year

Trans. of Kauchuk i Rezina (USSR) 1959, v. 18, no. 1, p. 1-[64].

ZHURNAL PRIKLADNOY KHIMII (USSR) 1959, VOL. 32, NO. 2, P. 241-472 (Journal of Applied Chemistry). [1959] 1v. SOV-80-32-2-(1-56)/56.
Order from OTS $0.90, $5.00/6 mo. PB 141 076T-2
Foreign $1.15, $6.50/6 mo.

Consists of abstracts in English.

[Bigiavi, Dino and Sabatelli, Vincenzo]
DERIVATIVES OF p-METHYLAZOBENZENE. [1959] [3]p. 1 ref. (foreign text included).
Order from SLA mi$1.80, ph$1.80 59-17768

Trans. of Gazzetta Chimica Italiana, 1927, v. 57, p. 560-561.

Böhm, Egon.
A METHOD AND A DEVICE FOR A CONTINUOUS EXTRACTION FROM SOLID BODIES. [1959] [7]p. (1 illus. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-17139

Trans. of Swiss patent 251,111, cl. 36c, pub. 16 July 48, appl. filed 28 Nov 45, registered 15 Oct 47, by Technochemie A. G., Zürich, Switzerland.

A method of continuous extraction from solid substances with the aid of solvents is described. In this procedure broken-up or granulated substances are successively moved through a series of round pans placed centrally around a vertical shaft, at various heights of the same, each pan consisting of a bottom rotating with the axis and provided with a sector-like opening, and of stationary side walls of which at least one part is made pervious to liquids; the above movement of the substance consists of consecutive free falls from pan to pan, the substance being sprinkled in each pan by a solvent which, before reaching a particular pan, has passed through all lower pans.

Eichler and Schander.
WASHING OF ALPHA IN APHTHOL FROM CRUDE BETA-NAPHTHOL. [1959] [4]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17144

Trans. of mono. Über das Auswaschen von Alphanaphtol aus Rohem Betanaphtol, Ludwigshafen, 3 Mar 33, PB 30151.

A search was made for the best and cheapest way of washing alpha-naphtha from crude beta-naphtol. Three methods were tested: (1) precipitation of solid beta-naphthol from alkaline solution at temperatures below 65°C, followed by washing of the solid substance; (2) separation of a liquid phase at temperatures above 85°C, followed by washing of the liquid substance; and (3) separation of a liquid phase, followed by solidifying and washing of the solid substance. The third method was more satisfactory than the other two.

Hückel, Walter.
NEW FLUORINE COMPOUNDS. [1959] 3p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15018

Trans. of Akad[emie der] Wiss[enschaften] Göttingen. Math[ematisch]-Physik[alische] Klasse. Nachr[ichten] (West Germany) 1946, p. 36-37.

Janiche, W. and Beck, H.
THE DESULPHURISATION AND DEOXIDATION OF PURE IRON IN THE VACUUM MELTING PROCESS. [1959].
Order from BISI £5 15s BISITS-1227

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1958 [v. 29, no. 10] p. 631-642.

Experiments are described for the production of high-purity iron by the desulphurization and deoxidation under vacuum of electrolytic iron, desulphurization being carried out by the volatilization of the sulphides of added metals. (JISI abstract)

Kalechits, I. V. and Syue-lun, K.
STUDIES OF CHINESE SCIENTISTS IN THE FIELD OF DESTRUCTIVE HYDROGENATION OF FUELS. [1959] 11p.
Order from ATS $14.95 ATS-90L32R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1958, v. 3, no. 7, p. 53-62.

Khamskiy, Ye. V. and Chepelevetskiy, M. L.
CRYSTALLIZATION OF CALCIUM SULFATE FROM SOLUTIONS OF EXTRACTION-PROCESS PHOSPHORIC ACID. [1959] 6p.
Order from ATS $7.50 ATS-89L32R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 5, p. 948-952.

Kropacheva, Y. N., Dolgoplosk, B. A. and Kulakova, M. N.
OXIDATION-REDUCTION SYSTEMS FOR INITIATION OF RADICAL PROCESSES. IX. MECHANISM AND EFFICIENCY OF THE ACTION OF POLYAMINE SYSTEMS IN THE POLYMERIZATION PROCESS. [1959] 11p.
Order from ATS $8.00 ATS-74L31R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1959, v. 29, no. 2, p. 565-575.

Lofblad, B. and Lindh, G.
A COMPARISON BETWEEN LOW-CARBON AUSTENITIC STAINLESS STEELS AND STABILIZED STEELS FOR WELDED APPARATUS IN THE CHEMICAL INDUSTRY. [1959].
Order from BISI £5 15s BISITS-1408

Trans. of Internat[ional] Inst[itute] of Welding. [Annual Assembly] Vienna, 1958, 30 June [Proceedings].

After a review of the literature, investigations of 18/8 austenitic steels with 0.03-0.14%C are described, and the effects of stabilizing the C with Ti

are noted. Specimens were microscopically examined after heat treatments between 650 and 750°C. Corrosion tests were carried out in copper sulphate/sulphuric acid solution and in 65% nitric acid. In certain respects austenitic steels with less than 0.06%C are shown to be comparable, and even superior, to Ti-stabilized stainless steels. (Author's summary)

Marecek, Vladimir.
THE FORMATION OF UREA AND ITS INTERMEDIATES. 29 Jan 53 [9]p. 11 refs.
Order from SLA mi$1.80, ph$1.80 59-15243

Partial trans. of Chem[icky] Obzor (Czechoslovakia) 1948, v. 23, p. 217-221.

Mirskiy, Ya. V.
MECHANISM OF DRYING OF PELLETED ALUMINIUM SILICATE CRACKING CATALYSTS (Mekhanizm Sushki Sharikovykh Alyumosilikatnykh Katalizatorov Krekinga). July 59 [10]p. 7 refs. RTS no. 1071.
Order from LC or SLA mi$1.80, ph$1.80 59-18409

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1957 [v. 2] no. 12, p. 45-52.

Natta, Giulio, Pegoraro, Mario, and Peraldo, Mario.
THE CHROMATOGRAPHIC FRACTIONATION OF STEREOBLOCK POLYMERS. [1959] [10]p. (3 figs. omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 59-17760

Trans. of la Ricerca Scientifica [ed il Progresso Technica nell'Economia Nazionale] (Italy) 1958, v. 28, July, p. 1473-1479.
Another translation is available from SLA, mi$2.40, ph$3.30, as 59-17059 [1959] 12p.

Natta, G., Asta, G. dall' and others.
STEREOSPECIFIC POLYMERIZATION OF VINYL ETHERS. [1959] 27p. 21 refs.
Order from SLA mi$2.70, ph$4.80 59-17204

Trans. of Angew[andte] Chem[ie] (West Germany) 1959, v. 71, no. 6, p. 205-210.
Another translation is available from SLA mi$2.40, ph$3.30 as 59-15761 [1959] 14p.

Nesmeyanov, A. N., Lutsenko, N. F. and Khomutov, R. M.
PREPARATION OF METALLIC DERIVATIVES OF VINYL ALCOHOL, tr. by Paul V. DePorte. 6 Apr 59, 10p. 10 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-14727

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 120, no. 5, p. 1049-1051.

These findings were reported in part in 1955 in Zürich, at the 14th International Congress on Theoretical and Applied Chemistry.

Oganov, K. A., Chekalyuk, Ye. B. and Snarskiy, A. N.
AN EFFECTIVE AND ECONOMICAL METHOD OF HEAT-TREATING OIL-BEARING FORMATIONS BASED ON LABORATORY EXPERIMENTS. [1959] 6p.
Order from ATS $8.50 ATS-65L31R

Trans. of Neftyanoye Khoz[yaystvo] (USSR) 1954, v. 32, no. 9, p. 33-38.

Plisko, Ye. A.
SEARCH FOR NEW METHODS OF SYNTHESIZING CELLULOSE ETHERS. [1959] 4p.
Order from ATS $6.50 ATS-48L32R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1958, v. 28, no. 12, p. 3214-3216.

Ponomarov, V. D. and Sazhin, V. S.
LEACHING OF ALUMINA FROM NEPHELINES BY ALKALINE SOLUTIONS IN THE PRESENCE OF LIME. 8 July 59, 11p. JPRS: L-1754-D.
Order from OTS $0.50 59-11687

Trans. of Izvestiya Vysshikh Uchebnykh Zavedeniy. Tsvetnaya Metallurgiya (USSR) 1958, no. 2, p. 93-100.

Roginskiy, S. Z.
ISOTOPES IN CATALYSIS. [1959] 27p.
Order from ATS $39.60 ATS-89L31R

Trans. of Problemy Kinetiki i Kataliza (USSR) 1957, v. 9, p. 5-30.

Schmidt, Wi., Bueche, and Wiest.
PROCEDURE AND APPARATUS FOR HIGH PRESSURE CHLORINATION. [1959] [6]p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-17137

Trans. of unidentified German mono., Ludwigshafen, 14 Apr 37, PB 14998.

A procedure for chlorination at pressures of about 40 to 100 atm is described and the necessary apparatus explained. In addition the experience of about a year's use of the technical apparatus is reported.

Tal'kovskiy, G. B., Libina, S. L. and others.
METHOD FOR PREPARING TRIS(2-HYDROXYETHYL) CYANURATE. [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 59-17088

Trans. of Russian patent 118,042, 18 Sep 58.

The proposed invention makes it possible to carry out the process in one stage and to obtain the product from relatively accessible and harmless raw materials. Triethanol cyanurate is obtained by the direct reaction of cyanuric acid and ethylene oxide in the presence of a tertiary organic base as catalyst.

Vol'fkovich, S. I.
PROSPECTS FOR THE CHEMICAL INDUSTRY IN EASTERN SIBERIA. 21 Aug 59, 14p. JPRS: L-936-N.
Order from OTS $0.50 59-13829

Trans. of Akademiya Nauk SSSR. Sibirskoye Otdeleniye. Izvestiya, 1958, no. 12, p. 51-60.

Yenikolopyan, N. S., Kleymenov, N. A. and others.
PREPARATION OF FORMALDEHYDE IN A FLOW APPARATUS BY THE CATALYTIC OXIDATION OF METHANE USING NITROGEN OXIDES. [1959] 9p.
Order from ATS $8.00 ATS-52L32R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 4, p. 913-919.

Zorn, B. and Mauthe, G.
PROCESS FOR THE PREPARATION OF RESINS FROM MELAMINE, DICYANDIAMIDE, AND PARAFORMALDEHYDE. [1959] 2p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17090

Trans. of German patent application F 22,797 (IVb/39c) DAS 1,050,541, filed 18 Jan 55, pub. of appl. and issue of DAS 12 Feb 59, by Farbenfabriken Bayer A.-G.

Melamine (63 parts), dicyandiamide (42 parts), and paraformaldehyde (60 parts) are melted together on the boiling water bath and condensed until a sample gives a white turbidity in water, which completely dissolves in solutions of sodium dinaphthylmethanedisulfonate and gives a precipitate on adding a few drops of dilute acetic acid. The condensation is carried out in the melt between 70 and 200°C, preferably between 100 and 130°C, and that before, during or after condensation, to solubilize the resin, a non-acid, water-soluble metal salt of arylsulfonic acids, particularly of naphthalenesulfonic acids condensed with formaldehyde, is added.

Zorn, B. and Mauthe, G.
PROCESS FOR THE PREPARATION OF RESINS FROM MELAMINE, UREA, AND PARAFORMALDEHYDE. [1959] 3p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17089

Trans. of German patent application F 22,796 (IVb/39c) DAS 1,050,542, filed 18 Jan 55, pub. of appl. and issue of DAS 12 Feb 59, by Farbenfabriken Bayer A.-G.

The process is characterized in that the condensation is carried out in the melt between 70 and 200°C, preferably between 100 and 130°C, and that before, during, or after condensation, to solubilize the resin, a non-acid, water-soluble metal salt of arylsulfonic acids, particularly of naphthalenesulfonic acids condensed with formaldehyde, is added.

Civil Engineering

Borsuk, O. N.
ARTIFICIAL REGULATION OF THE FLOW OF SMALL STREAMS IN THE EUROPEAN PART OF THE USSR. [1959] [27]p. 15 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-18556

Trans. of Gosudarstvennyy Gidrologicheskiy Institut. Trudy (USSR) 1957, v. 62, p. 3-23.

The regulation of small streams by reservoirs and ponds is discussed, with reference to tabulated data on water balances, areas of reservoirs, volume of annual flow, maximum discharge of spring high water, etc.

Courbon, J.
THE UNDERSEA TUNNEL OF HAVANA, CUBA (Le Tunnel Sous-Marin de la Havane (Cuba)) tr. by A. D. S. [1959] [11]p. (34 figs. omitted). H-2787.
Order from LC or SLA mi$2.40, ph$3.30 59-14531

Trans. in part of Travaux (France) 1958, Nov, p. 951-957.

The Havana tunnel, constructed by the Société des Grands Travaux de Marseille, which was opened to the public on 1 June 1958, is described. This tunnel links the old city with the east side of the harbor. Distinctive structural features and methods of construction are described.

Le Méhauté, B.
THE PERVIOUSNESS OF ROCK FILL BREAKWATERS TO PERIODIC GRAVITY WAVES. [1959] 42p.
Order from ATS $31.75 ATS-36L31F

Trans. of la Houille Blanche (France) 1958, no. 2, p. 148-179.

See 59-18872

Le Méhauté, B.
THE PERVIOUSNESS OF ROCK FILL BREAKWATERS TO PERIODIC GRAVITY WAVES. [1959] 19p.
Order from ATS $18.30 ATS-99L31F

Trans. of la Houille Blanche (France) 1958, v. 13, no. 3, p. 256-269.

See 59-18871

Electrical and Electronic Engineering

*ELEKTROSVYAZ' (USSR) 1959 [V. 13] NO. 4, P. 3-80 (Electrical Communications). [1959] [24]p.
SOV-106-59-4-(1-13)/13.
Order from OTS $0.60, $3.50/6 mo. PB 141 099T-13
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. ELEKTROMEKHANIKA (USSR) 1958, NO. 10, P. 3-159 (News of Institutes of Higher Learning, Electromechanics). [1959] 1v. SOV-144-58-10-(1-17)/17.
Order from OTS $0.80, $4.50/6 mo. PB 141 101T-3
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

*RADIOTEKHNIKA I ELEKTRONIKA (USSR) 1959, V. 4, NO. 4, P. 559-732 (Radio Engineering and Electronics). [1959] 1v. SOV-109-4-4-(1-24)/24.
Order from OTS $0.70, $4.00/6 mo. PB 141 106T-15
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. ELEKTROTEKHNIKA (USSR) 1959, NO. 3, P. 1-301 (Journal of Abstracts. Electrical Engineering). [1959] 1v. SOV-112-59-3-(4244-6373).
Order from OTS $1.40, $7.50/6 mo. PB 141 109T-4
Foreign $1.65, $9.00/6 mo.

Complete translations of those entries which were originally published in the USSR, excluding those abstracted elsewhere.

SOVIET UTILIZATION OF SOLAR ENERGY. 15 May 58 [8]p. PAL 59-4.
Order from OTS $0.50 59-21124

In the Soviet Union, solar energy development is principally carried out by the Helio-technical Laboratory of the G. M. Krzhizhanov Power Institute under the direction of Dr. Tech. Sci. V. A. Baum. Although basic research in such related fields as semiconductors and photosynthesis is carried on elsewhere, it appears that all attempts at application of solar energy are made by this laboratory. There is no evidence that Soviet development of thermal uses of solar energy has a high priority. The Soviets are developing thermal facilities utilizing solar energy to exploit hitherto unusable land where the incidence of solar radiation is high and the supply of conventional fuel is scarce. The principal Soviet effort in the development of thermal devices is directed toward large central concentrating systems rather than toward extensive use of individual housing units. The high initial cost of these systems has encouraged the Soviets to adapt them to multi-purpose uses such as providing communities with heat, refrigeration, and irrigation water. The Soviets have a capability in the photoelectric field approximately equal to that of the United States and are expected to make full use of solar batteries. In addition, they have displayed strong interest in the use of thermoelectric generators for converting solar energy, although reported efficiencies lag behind those achieved by solar batteries. The Soviets have not achieved efficient exploitation of solar energy by means of photochemical effects, although they have a strong capability in photochemistry and are conducting significant research at a basic level on the photosynthetic process.

VESTNIK ELEKTROPROMYSHLENNOSTI (USSR) 1959, V. [30] NO. 5, P. 1-80 (Herald of the Electrical Industry). [1959] 1v. SOV-110-59-5-(1-25)/25.
Order from OTS $0.70, $4.00/6 mo. PB 141 107T-13
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Bykhovskiy, Ye. L.
RESEARCH ON TELEMECHANICS. 18 Aug 59, 26p. (26 figs. omitted). JPRS: L-928-N.
Order from OTS $0.75 59-13818

Trans. of mono. Telemekhanika i yeye Primeneniye, Moscow, 1956, p. 5-18, 43-48 and 66-71.

Grün, A.
THE EFFECT OF VARIATIONS OF THE WAVE (OR CHARACTERISTIC) IMPEDANCE ON THE TRANSMISSION PROPERTIES OF WIDE BAND CABLE. Abridged Dissertation, Technische Hochschule, Berlin. [1959] [42]p. 9 refs.
Order from SLA mi$3.30, ph$7.80 59-15165

Trans. of T[elegraphen und] F[ernsprech] T[echnik] (Germany) 1939, v. 28, no. 12, p. 433-446.

Iordanishvili, Ye. K. and Stil'bans, L. S.
THERMOELECTRIC MICROREFRIGERATORS (Termoelektricheskiye Mikrokholodil'niki). 21 Feb 57 [3]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17315

Trans. of *Zhurnal Tekhnicheskoy Fiziki (USSR) 1956, v. 26, no. 2, p. 482-483.

Ivakhnenko, A. G.
INVARIANCE CONDITIONS FOR LINEAR AUTOMATIC CONTROL SYSTEMS WITH PERTURBATIONS ASSIGNED STATISTICALLY. [1959] 6p. 8 refs.
Order from MDF $6.00 MDF I-115

Trans. of Avtomatyka (USSR) 1957, v. 2, no. 3, p. 32-36.

Jacquier, Pierre Aime-Charles.
FABRICATION PROCESS OF ELECTRODES FOR ALKALINE STORAGE BATTERIES AND ELECTRODES THUS FABRICATED. [1959] 6p.
Order from LC or SLA mi$1.80, ph$1.80 59-17810

Trans. of French patent 1, 017, 110, gr. 12, cl. 5, appl. 4 May 50, issued 10 Sep 52, pub. 2 Dec 52.

A process is described for the fabrication of electrodes for alkaline storage batteries consisting of a porous body in the pores of which is deposited an active material. This process consists of impregnating the said body in an aqueous solution of a base, then drying it and finally submerging it in a metallic salt bath of which the hydrate can be precipitated by the base.

Mayeur, J. P.
ON THE PROBABLE LIFETIME OF PAPER CAPACITORS. [1959] 19p. 2 refs.
Order from SLA mi$2.40, ph$3.30 59-17774

Trans. of Câbles et Transmission (France) 1958, v. 12, no. 2, p. 136-143.

The statistical laws of distribution of the lifetime of paper dielectric capacitors as well as the methods of accelerated aging are studied by examining in succession the influence of the temperature and of the applied voltage. From this a testing method is derived, by means of which the conditions of use of the studied capacitors can be defined as a function of a given length of service and a definite proportion of failures during this time. The method has been applied to several series of capacitors and the experimental results are in satisfactory agreement with the theory.

Schlecht, Leo and Ackermann, Karl.
TECHNIQUE FOR MAKING POROUS PARTS. [1959] 4p.
Order from LC or SLA mi$1.80, ph$1.80 59-17809

Translation of German patent 838375, cl. 40b, gr. 3 30 B 3905 VIa/40b, pat. on 26 May 50, appl. 23 Aug 51, announced 3 Apr 52, issued 8 May 52, by Badishe Aninlin-& Soda Fabric, Ludwigshafen/Rhein.

A process is described for making porous metal parts particularly suitable for application as electrodes in accumulators with alkaline electrolytes. The porous parts are uniquely made by taking metal powder having small bulk weight, desirably less than 2 kg per liter and bringing the powder into intimate contact with salt of a noble metal and appropriately sintering it in hydrogen atmosphere.

Schulz, P., Bauer, A., and Gerthsen, P.
INVESTIGATIONS OF ARC CATHODES. [1959] 7p.
Order from ATS $9.30 ATS-24L30G

Trans. of Appl[ied] Sci[entific] Research. Section B (Netherlands) 1955, v. 5, p. 210-218.

Taki, Yasuo and Tamiya, Jun.
NOISE FIGURE OF VERY-HIGH-FREQUENCY RECEIVER. [1959] 25p. 12 refs.
Order from SLA mi$2.70, ph$4.80 59-17795

Trans. of Denki Tsushin Gakkai Zasshi (Japan) 1950, v. 33, no. 6, p. 305-312.

It has been a common practice to represent the grid-induced noise of tubes (caused by finite electron transit time) as an equivalent constant-current noise source connected between the grid and the cathode of the tube. However, this is correlated to the cathode current fluctuation, and can be considered as a sort of electronic feedback. On this viewpoint the noise figure of VHF receiver is calculated and the equivalent circuit is introduced. From these, the effect of input admittance of the tube due to the electronic loading and cathode lead inductance on noise figure and the effect of the grid induced noise are made clear. Then the neutralizing coil connected between the plate and the grid in the case of Wallman's cascade amplifier are explained.

Wolff, D.
CONTINUOUS MEASUREMENT OF THE CAPACITANCE DURING PRODUCTION OF COAXIAL CABLES. [1959] 9p.
Order from ATS $12.60 ATS-99L32G

Trans. of [NTZ]; Nachrichtentechnische Z[eitschrift] (West Germany) 1959, v. 12, no. 1, p. 29-32.

Yakobson, B. M.
ELECTRONIC MACHINE FOR CENTRALIZED CONTROL. 8 Dec 58 [13]p. 7 refs. JPRS: 925-N.
Order from OTS $0.50 59-11187

Trans. of Priborostroyeniye (USSR) 1958, no. 7, p. 4-8.

The MARS-300 (Machine for Automatic Registration and Signalization of technological processes with 300 points) is described. The machine controls 300 points at which temperature, average temperature, flow, and vacuum are measured. The maximum speed of the sampling device for the detection of deviations is 10 points/second, and the technical speed of registration amounts to three seconds for each single point. The commutation system is of the single-circuit type, and the machine yields information in numerical form and in the form of signals on a mimic bus.

Mechanical Engineering

AKADEMIYA NAUK SSSR. OTDELENIYE TEKHNICHESKIKH NAUK. IZVESTIYA: ENERGETIKA I AVTOMATIKA, 1959, NO. 1, P. 3-148 (News of the Academy of Sciences of the USSR, Department of Technical Sciences, Power Engineering and Automation). [1959] 1v. SOV-24-59-1-(1-35)/35.
Order from OTS $1.00, $5.50/6 mo. PB 141 019T-10
Foreign $1.25, $7.00/6 mo.

Consists of abstracts in English.

Vits, H.
GRAPHIC REPRESENTATION OF ABSORPTION PROCESSES ESPECIALLY FOR THE DEHUMIDIFICATION OF AIR WITH AQUEOUS LITHIUM CHLORIDE SOLUTION. [1959] 55p. 17 refs.
Order from SLA mi$3.60, ph$9.30 59-17262

Trans. of Forschung auf dem Gebiete des Ingenieurwesens (Germany) 1958, v. 24 [no. 5] p. 137-148 and [no. 6] p. 187-192.

Ordnance, Missiles, and Satellite Vehicles

Eggert, J.
THE INITIATION OF EXPLOSION BY LIGHT. [1959] [22]p. 6 refs.
Order from LC or SLA mi$2.70, ph$4.80 SCL-T-221

Trans. of Royal Society in London. Proceedings. Series A. Mathematical and Physical Sciences, 1958, v. 246, no. 1245, p. 240-247.

By means of a tabular compilation it is shown that a large number of explosion primers can be caused to detonate by brief irradiation with the sparks from energetic electric discharges. Whereas it could be found that in the case of nitrogen iodide there is a weak photochemical effect in all other cases initiation is due to the sudden heating of the compounds, therefore a photothermic effect. In the case of silver nitride Ag_3N, it is even possible to prepare layers so thin that the ignition can be effected in the area of the incident radiation but cannot be caused to spread to other areas of the layer.

Linyer de la Barbée, M.
CARTRIDGES WITHOUT CASES? tr. by George R. Loehr. Mar 57, 21p. Picatinny Arsenal translation no. 10.
Order from LC or SLA mi$2.70, ph$4.80 59-12433

Trans. of Mémorial de l'Artillerie Francaise (France) 1955, v. 29, no. 4, p. 810-816.
Includes a critical evaluation by Dr. Herman Schmager.

The possibility of doing away with the cartridge case in artillery ammunition by directly combining the charge with the projectile is considered. A multiperforated unit made of a solventless propellant of the standard American accelerated combustion type is proposed. The shell would be characterized by having its rotating band next to the bourrelet. This shell would have a "tail" analogous to that of the tracer unit of the 100 mm 28-33 model, and a primer which would be carried away with it. A 100 mm cartridge would have a total length of 560 mm and a total weight of 17.5 kg, as opposed to the present cartridge which is more than a meter long and 24 kg in weight.

Petrovich, G. V.
THE FIRST ARTIFICIAL SATELLITE OF THE SUN: EXCERPTS (SOVIET SPACE PLANS DISCUSSED) (Pervyy Iskusstvennyy Sputnik Solntsa). [1959] [11]p. 1 ref.
Order from LC or SLA mi$2.40, ph$3.30 59-16359

Trans. of Akademiya Nauk SSSR. Vestnik, 1959 [v. 29] no. 3, p. 8-14.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-16482, AF-1 255 824, 21 May 59, 8p.

Petrovich, G. V.
THE FIRST MAN-MADE SOLAR SATELLITE (Pervyy Iskusstvennyy Sputnik Solntsa). 21 May 59 [8]p. AF 1255824.
Order from LC or SLA mi$1.80, ph$1.80 59-16482

Trans. of Akademiya Nauk SSSR. Vestnik, 1959 [v. 29] no. 3, p. 8-14.

Pour'quie, L.
THEORY OF THE FUNCTIONING OF CARTRIDGE CASES DURING FIRING, tr. by George R. Loehr. Aug 56, 12p. Picatinny Arsenal translation no. 6.
Order from LC or SLA mi$2.40, ph$3.30 59-12436

Trans. of Mémorial de l'Artillerie Francaise (France) 1955, v. 29, no. 2, p. 333-345.

The results of theoretical calculations on the action of a cartridge case during firing indicate that longitudinal rupture can be caused by a deficiency in the elongation of the metal due to an excess of cold working. The sticking of the cartridge case in the chamber depends on the modulus of elasticity of the case metal, the firing pressure at the surface of the case, and the friction of the case against the chamber. The last parameter equally influences the tendency to transverse ruptures. Deformations which a cartridge case undergoes can be examined theoretically, but numerous and sometimes questionable simplifications must be made.

Rollof, Yngve
RISKS ARISING FROM MISFIRES, tr. by George R. Loehr. Apr 57 [9]p. Picatinny Arsenal translation no. 11.
Order from LC or SLA mi$1.80, ph$1.80 59-19543

Trans. of Mémorial de L'Artillerie Francaise (France) 1955, v. 29, no. 2, p. 497-503.

If a projectile left by misfire of an automatic gun is not immediately extracted from the barrel which has been heated by firing, serious hazards may exist. Risks arising from heating of ignition charge, powder or explosives up to deflagration temperatures are described. Changes in the stability of the charged projectile and risk of hangfire are discussed. Exterior cooling of the barrel is highly recommended.

Sakharov, V. N., Kolesnikov-Svinarev, V. I. and others.
THE LOCAL DISTRIBUTION OF SOIL "THROWOUT" FROM UNDERGROUND EXPLOSIONS (Raspredeleniye na Mestnosti Grunta Vybrasyzayemogo pri Podzemnykh Vzryvakh) tr. by Marcel I. Weinreich. 1 Apr 59, 9p.
Order from LC or SLA mi$1.80, ph$1.80 SCL-T-240

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 124, no. 2, p. 314-317.

Twenty explosions weighing from 10kg to 10 metric tons of Ammonite No. 6 (an Ammonium Nitrate/ di nitro-naphthalen explosive) were used. The soil was 'tagged' by using 50 to 60 ampules containing 1 millicurie of Sb^{124}, placed within the expected crater contour. The results show that the smaller the angle between the radial line and the axis of the crater, the

farther will be the throwout of the soil. The data was used to calculate an empirical formula for the magnitude of the average quantity, σ, of soil fallout on a unit area located at a given distance from the epicenter of the explosion: $\sigma \sim 100w(r/\sqrt[3]{c})^{-2.2}$, where w is the depth of burial of the charge in meters, r stands for the horizontal distance from the epicenter of the explosion expressed in meters, c is the weight of the charge in kilograms.

Yatsunskiy, I. M.
THE EFFECT OF GEOPHYSICAL FACTORS ON SATELLITE MOTION. [1959] 18p. 9 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-16766

Trans. of unidentified Russian article.

The analysis of the influence exerted by geophysical factors upon the motion of a satellite close to the earth shows that, at the present level of knowledge in this field, great errors in predicting the orbit may be made. On the basis of prolonged measurements of the orbit it is quite possible to define more accurately data available on the density of the atmosphere at heights ranging from 150 to 300 km. It appears possible to define more clearly also the magnitude of compression of the earth spheroid. The determination of the field of anomalies of gravity is the most difficult problem, since it is necessary here to determine on the basis of measurements the periodic changes of oscillating elements in the orbit.

Ship Building

Grosskopf, B. C.
BASIC PRINCIPLES CONCERNING THE FORM OF THE TRANSVERSE OTTER BOARD USED IN TRAWLING. [1959] [9]p. (refs. omitted) A. C. S. I. L. Trans. no. 990.
Order from SLA mi$1.80, ph$1.80 59-15137

Trans. from Werft, Reederei, Hafen (Germany) 1942, no. 16, 15 Aug.

Melodia, Aldo
ON THE PERFORMANCE OF A PROPELLER BEHIND A SHIP (Sul Funzionamento Dell'Elica Associata ad Una Carena) tr. by J. W. Shultz, Jr. Jan 59, 16p. Trans. 286.
Order from LC or SLA mi$2.40, ph$3.30 59-12968

Trans. of La Marina Italiana (Italy) 1955, v. 53, no. 12, p. 309-314.

Recalling the classical concepts of analysis of self-propelled model tests, the author here proposes and describes a method of total identity, i. e., of both thrust and power, by means of which, considering a rotary wake as well as an axial wake, the relative rotative efficiency is reduced to unity. After defining the notions of a single-valued performance criterion, as opposed to a criterion based on either thrust or torque (power) alone, and of effective propeller speed, he examines by means of the method of total identity some particular cases of propulsion and the probable relationships between nominal wake velocity, effective velocity and thrust deduction.

Silberkrüb, J.
PRACTICAL EXPERIENCE WITH NEW TYPES OF OTTER BOARD. [1959] [7]p. 2 refs. A. C. S. I. L. Trans. no. 1000.
Order from SLA mi$1.80, ph$1.80 59-15138

Trans. from Schiff und Werft (Germany) 1943 [v. 24] no. 19/20.

Curved otter boards (used in deep sea fishing to hold open the trawling nets) designed on the basis of scientific investigation and model experiments with nets have an appreciably smaller total drag, including the net drag. These boards are easier to handle than the old boards, and the resultant catches are greater, especially in the case of herring.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

ELECTRICAL PLATE FOR COOKING, tr. by J. C. Levy. 30 Mar 58, 3p. (4 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-14700

Trans. of German patent 706,273, cl. 21h, gr. 12, pat. from 28 Aug 34, granted 17 Apr 41, pub. 22 May 41, by Siemens-Schuckertwerke Akt. -Ges., of Berlin-Siemensstadt.

PROCESS OF PRESERVING THE AROMATIC SUBSTANCES OF DRY SOLUBLE EXTRACTS OF PARTS OF PLANTS SUCH AS BLACK TEA, PARAGUAY TEA, HERB TEA, ECT., SERVING FOR THE PREPARATION OF TEA, tr. by J. C. Levy. 2 Feb 59, 3p.
Order from LC or SLA mi$1.80, ph$1.80 59-14218

Trans. of Swiss patent 222,945 (addition to patent 201,940) cl. 34d, appl. 7 Mar 38, registered 15 Aug 42, pub. 2 Nov 42, by Société d'Etudes et Applications Industrielles, Lausanne.

A process is described for preserving the aromatic substances of the dry soluble extracts of plant parts serving for the preparation of tea. To a liquid obtained by lixiviating with water parts of plants serving for the preparation of tea, there is added at least one soluble material whose function is to bind and permanently to retain the aromatic substances, the mixture being then spray-dried to a powder.

Ciaudti, E[lvio].
A STUDY OF THE BEHAVIOUR OF SOME ELASTOMERIC AND PLASTOMERIC MATERIALS FOR PACKINGS. Oct 58 [35]p. TIL/T4937.
Order from SLA mi$3.00, ph$6.30 59-10182

Trans. of mono. Studio sul Comportamento di Alcuni Materiali Elastomerici e Plastomerici per Guarnizioni, Italy, 1956, 35p.

Demin, G. S. and Demidov, A. R.
EFFECT OF LOAD AND COMPOSITION OF INITIAL MATERIAL ON THE EFFICIENCY OF SIEVE PERFORMANCE IN CLEANING GRAIN MIXTURES (Vliyaniye Nagruzki i Sostava Iskhodnogo Materiala na Effektivnost' Raboty Sit pri Ochistke Zernovykh Smesey). 16 Sep 58 [27]p. (13 figs. omitted) 7 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-17116

Trans. of Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Zerna [i Produktov Ego Pererabotki.] Trudy (USSR) 1954, v. 27, p. 217-235.

Results are presented of an experimental investigation to determine the basic factors influencing the relationship between the performance of the "subsow" sieve (sieves for separating particles smaller than the main component of a given grain mixture), on the one hand, and the applied load and the composition of the initial grain mixture, on the other hand.

Moebes, E. and Wieninger, L.
THE EFFECT OF THE EXCHANGE OF ALKALI IONS FOR CALCIUM ON THE TREATMENT AND YIELD OF SUGAR JUICES. [1959] 14p. 9 refs.
Order from SLA mi$2.40, ph$3.30 59-17638

Trans. of Zucker (West Germany) 1956, v. 8, no. 7, p. 129-134.

A new cation exchange material based on activated carbon is described and its use in processing sugar beet juices is discussed. Final molasses of a degree of purity of 45 are obtained by the exchange of 50 to 60% of the alkali ions for calcium. The exchange process neither increases the viscosity of the thin juices nor reduces the rate of crystallization. The theory of Dedek (Zeitschrift VDZ 1927, S 495 and 548; Zeitschrift d. tsch. Zukerind. 1923, S 515, and 1926, S 349; and Zentralblatt f. d. Zukerind. 1928, S 45) that true salts of calcium do not act as molasses formers in sugar juices is confirmed.

Yang, En-fu.
PRESENT STATUS AND FUTURE OF CHINA'S RESEARCH IN NUTRITIONAL SCIENCE. 3 June 59, 11p. JPRS: L. 1132 D.
Order from OTS $0.50 59-11317

Trans. of Sheng-li K'o-hsueh Chin-chan (Chinese People's Republic) 1957, v. 1, no. 1, p. 31-37.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

USSR INDUSTRIAL EQUIPMENT (TRANSPORTATION CONSTRUCTION, PRODUCTION, AND POWER MACHINERY) [NO. 13, 26 AUG 59]. [1959] [35]p. 131 refs.
Order from LC or SLA mi$3.30, ph$6.30 59-19274

Trans. of unevaluated information selected from Russian-language publications.

Contents:
Items of special interest
  Conversion of farm machinery plant to motor-vehicle output
  Stress on precision machine-tool production
Transportation equipment: automotive industry
  New developments
  Passenger cars, trucks, and buses
  Motor-vehicle plants
  Parts and equipment plants
  Motorcycles, motorollers, and bicycles
  Bearings
Construction machinery
  Earth-moving machinery
  Cranes and leaders
  Road and construction materials equipment
Production machinery
  Machine tools
    Standardization
    Plant information
    Automatic lines
    Grinding and milling machines
    Drilling and boring machines
    Other machine tools
  Presses and press equipment
  Forging hammers
Power machinery
  Turbines
  Generators
  Motors
  Switchgear
  Insulators
  Shortages and deficiencies
  Institute information
(See also 59-18396, 59-18843)

A MACHINE FOR SHARPENING COMBS USED IN THE MANUFACTURING OF WOOD FIBERS. [1959] [8]p. (9 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-17145

Trans. of French patent, filed 7 Apr 52, by Société Technobois.

A machine for sharpening combs used in the manufacturing of wood fibers is described. The sharpening tool glides along an articulated guide which recedes at each ascending movement of the tool so as to allow the teeth to come, in succession, into position for sharpening; the same guide approaches the comb at every descending movement of the tool so as to bring the tool, in a slightly bent position, into contact with the comb.

Prusak, Jan.
THEORETICAL BASES FOR EVALUATING THE SERVICE LIFE OF TOOL CUTTING EDGES (Teoreticke Podklady pro Hodnoceni Trvanlivosti Ostri) tr. by K. Hirst and W. E. Hirst. [1959] [27]p. Trans. no. 4019.
Order from SLA mi$2.70, ph$4.80 59-17419

Trans. of Drevársky Výskum (Czechoslovakia) 1956, v. 1, no. 1/2, p. 171-191.

Kinematic relationships in the operation of revolving woodworking tools are considered, in order to determine bases for the evaluation of the durability of cutting edges. The point is made that the average durability of woodworking tools is very low in comparison to that of metal-cutting tools. It is concluded that as presently designed, multi-bladed tools are uneconomical.

Soden, A.
GEARING AS A SOURCE OF NOISE (Des Zahnrad als Larmquelle). [1959] [15]p. (31 figs. omitted) 12 refs.
Order from SLA mi$2.40, ph$3.30 59-17879

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (Germany) 1933, v. 77, no. 9, p. 231-238.

Engines and Propulsion Systems

Haller, P. de.
THE BEHAVIOR OF AIRFOIL CASCADES IN AXIAL-FLOW COMPRESSORS AND IN THE WIND TUNNEL (Das Verhalten von Tragflügelgittern in Axialverdichtern und im Windkanal). [1959] 13p. (16 figs. omitted) 5 refs.
Order from SLA mi$2.40, ph$3.30 59-17853

Trans. of Brennstoff-Wärme-Kraft (West Germany) 1953, v. 5, no. 10, p. 333-337.

A lecture delivered at the Meeting of the Committee for Flow Technology of the Society of German Engineers (VDI) on March 19-21, 1953.

Ziebart, E.
INVESTIGATIONS ON A FOTTINGER GEAR (Untersuchungen an einem Föttinger-Getriebe). [1959] [33]p. (40 figs. omitted) 10 refs.
Order from SLA mi$3.00, ph$6.30 59-17852

Trans. of Verein Deutscher Ingenieure. Zeitschrift (Germany) 1953, v. 95, no. 30, p. 1027-1036.

The characteristic field of a Foettinger gear was measured with rotating and motionless guide wheel and compared with the course of the torque calculated from a streamline theory. The differences obtained can be interpreted partly as a deviation of the direction of flow from the blade direction at the exit of the wheels and partly as a predominance of the exchange flow with small rotation flow. Qualitative tests in an open channel show the mutual influence of the cascades. The effect of the impulse exchange was proven by tests. When the gear was used as a "trilok" gear the investigations on the behavior showed nonsteady operating conditions. (Author's abstract)

Manufacturing Equipment and Processes

COMMUNIST CHINA'S LIGHT INDUSTRY: SELECTED TRANSLATIONS 22 July 59, 73p. JPRS: 1784-N.
Order from OTS $2.00 59-13727

Trans. of selected articles from Chung-kuo Ch'ing Kung-yeh (Chinese People's Republic) 1958, no. 1, p. 13-14; no. 2, p. 2-5, no. 4, p. 4 and no. 8, p. 3-8.

*PRIBOROSTROYENIYE (USSR) 1959, NO. 3, P. 1-32 (Instrument Manufacture). [1959] [21]p. SOV-119-59-3-(1-15)/15.
Order from OTS $0.50, $3.00/6 mo. PB 141 119T-16
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

USSR ELECTRONIC AND PRECISION EQUIPMENT [NO. 13, 4 SEP 59]. [1959] [47]p. 120 refs.
Order from LC or SLA mi$3.30, ph$7.80 59-19240

Trans. of unevaluated information selected from Russian-language publications.

Contents:
Items of special interest
- Belorussian SSR radio production
- USSR power capacitor production
- Solar heaters
- Thermoelectric generators
- Shortage of radio components

Plants
- Rarely mentioned plants
- New plants in operation
- New construction

Local production and administration
- RSFSR
- Baltic Republics
- Ukrainian SSR
- Georgian SSR

Electronic equipment
- General
- Radios
- Television
- Other sound equipment
- Tubes and bulbs
- Communications equipment

Computers

Precision equipment
- Automation
- Institutes
- Electronic and electrical instruments

Remote-control apparatus
Conventional process-control equipment
Process-control instruments based on radioactive isotopes
Petroleum and gas instruments
Medical and physical instruments
Electrical products
Wire and cable
Switches and relays
Small motors
Batteries
Other products
(See also 59-18400, 59-19240)

Alov, A. A. and Vinogradov, V. S.
EFFECT OF ELECTRODE VIBRATION ON ARC WELDING PROCESS AND ON WELD PROPERTIES [Vliyaniye Vibratsii Elektro-da na Protsess Dugovoy Svarki i Svoystva Shvov]. [1959] 2200 words.
Order from HB $5.60 HB-4670

Trans. of Svaroch[noye] Proizv[odstvo] (USSR) 1958, no. 9, p. 19-22.

Study of effect of electrode vibration on fusion of electrode; stability of arc; transfer of metal from electrode; to puddle; distribution of porosity; and formation of weld, based on welding experiments with low-carbon steel strip and aluminum plate. Vibrating mechanism; range of vibration frequencies used: 5-80/sec., of amplitudes of electrode-tip movement: 0.002-0.10 in. Data on composition of weld metal and weld-metal structure with and without vibration. Mechanical properties of welds made with and without vibration. Advantages of electrode vibration for all fusion welding processes; its special merits for argonarc welding. (HB abstract)

Baranov, A. I. and others.
EFFECT OF MOLYBDENUM, CHROMIUM, AND ALUMINUM ON [TRANSVERSE] STRENGTH OF HARD METALS BONDED WITH NICKEL OR COBALT. [1959] 2000 words.
Order from HB $4.85 HB-4736

Trans. of Akad[emiya] Nauk SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Topl[ivo] 1959, no. 2, p. 43-47

Study of effect of alloying Ni or Co binders with various amounts of Mo, Cr, and Al on strength of sintered tungsten carbides at various temperatures. Distribution of alloying elements between binder and carbide phases. Strengthening action of Cr at high temperatures. Percentages of Mo, Cr, and Al in binder ensuring maximum strength at high temperatures. Quantities of Mo, Cr, or Al related to the total amount of binder. (HB abstract)

Born, K. and Wittstruck, H.
AMOUNT AND NATURE OF THE OXIDE INCLUSIONS SUSPENDED IN OPEN-HEARTH STEEL BATHS. [1959] 7800 words.
Order from HB $15.60 HB-4648

Trans. of Stahl und Eisen (West Germany) 1958, v. 78, no. 22, p. 1514-1525.

Latest report on effect of metallurgical measures during basic open-hearth heats on oxide suspensions and, hence, steel quality, based on an investigation of thirty heats. Drawbacks of sampling the steel bath with a spoon when information on the condition of the metal in a furnace is desired. Sampling technique worked out by authors and using immersion molds, without (and with) killing the metal in the molds. Special isolating technique for determination of amount, size, and composition of oxide particles suspended in steel bath. Heat stage during which the main portion of inclusions is eliminated. Extent to which impurities can be separated out during the boil. (HB abstract)

Bruma, Marc.
ELECTROEROSION AND SPARK-MACHINING, PRESENT STATUS AND FUTURE PROSPECTS (Electro-érosion et usinage par étincelles). [1959] [17]p. 23 refs.
Order from SLA mi$2.40, ph$3.30 59-17622

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] (Switzerland) 1956 [v. 22, no. 1] p. 18-22.

Brunn, F.
A CONTRIBUTION TO THE PROBLEM OF PIN-HOLE POROSITY (SUB-CUTANEOUS BLOWHOLES) IN STEEL CASTINGS. [1959].
Order from BISI £3 5s BISITS-1271

Trans. of Giessereitechnik (Germany) 1958 [v. 4] Dec, p. 307-310.

Eckstein, H. J.
PRODUCTION OF STEEL BY MIXING AND REDUCING-ALLOYING PROCESSES, AND TREATMENT OF HOT METAL WITH SLAG. [1959] 1500 words.
Order from HB $4.25 HB-4620

Trans. of Neue Hutte (East Germany) 1959, v. 4, no. 4, p. 250-252.

Report on Chinese adaptions of European developed mixing and reducing (slag)-alloying processes. The three principal mixing processes; combinations of various melting units. Production of ball-bearing and transformer steels by reducing-alloying process, one version of this involving the use of two electric furnaces of different capacities, the larger for carbon steel, and the smaller for alloy and reducing slag, the latter to be run into the larger furnace after removal of the oxidizing slag therefrom and deoxidation. - Treatment of hot metal with slag: trials with ores; trials with slags; trials with mixtures of slag and ores. (HB abstract)

Ferry, R. and Roques, C.
SOUNDNESS OF HEAVY FORGING INGOTS. [1959].
Order from BISI £3 BISITS-836

Trans. of Rev[ue de] Mét[allurgie] (France) 1957 [v. 54] Mar, p. 175-180.

Fridman, Ya. B. and Konoplenko, V. P.
MECHANICAL PROPERTIES OF TOOL STEELS [Mekhanicheskiye Svoystva Instrumental'nykh Staley]. [1959] 3600 words.
Order from HB $5.80 HB-4442

Trans. of Metallov[edeniya i Termicheskaya] Obra[botka] Met[allov] (USSR) 1958, no. 12, p. 2-9.

Development of methods for testing low-tempered tool steels for mechanical properties under static and cyclic stressing, and results obtained with these methods. Steel compositions studied- 1.20% C, 0.3 Mn, 0.2 Si; 0.87% C, 1 Cr, 1.4 Si; 0.87% C, 4 Cr, 2 1/2 V, 9 W; 0.75% C, 4 Cr, 1.2 V, 18 W. Preceding heat treatment of specimens. Usefulness of wire strain gages for measuring the strain of very hard tool steels right up to failure. Particulars on specimens (circular-section and flat) for tensile, transverse bend, and torsion testing. Mechanical properties determined by above methods; effect of anisotropy and of nonuniformity across section as function of fiber direction; failure in elastic vs. plastic ranges. Fatigue characteristics: N/S curves and endurance limits of steels. Size effect in strength properties. (HB abstract)

Gerchikov, D. S.
REDUCTION OF CONTAMINATION OF RIMMING STEEL WITH NON-METALLIC INCLUSIONS. [1959] 4p.
Order from ATS $6.50 ATS-84L31R

Trans. of *Metallurg (USSR) 1958, no. 1, p. 15-17.

Gladkov, N. A. and others.
MAGNETIC CHARACTERISTICS OF SINTER AS FUNCTION OF ITS FERROUS OXIDE CONTENT. [1959] 2100 words.
Order from HB $5.75 HB-4752

Trans. of Akad[emiya] Nauk SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Topl[ivo] 1959, no. 2, p. 86-89.

Experimental study of a generally valid relationship between the ferrous oxide content of iron-ore sinters and their magnetic properties, the latter giving information on the nature of the sintering process. Lack of literature data on the particular magnetic characteristic which reflects best the properties of sinter; results of authors' study. Usefulness of magnetic measurements for determination of FeO content (and properties) of sinter: their accuracy is just as high as that of chemical studies. Advantages of using the magnetizing intensity at 500 oersteds as a criterion. Results obtained. (HB abstract)

Hofmann, W[ilhelm] and Schüller, H[ans]-J[urgen].
DEVELOPMENT OF COLD PRESSURE WELDING. [1959] 31p. 32 refs.
Order from SLA mi$3.00, ph$6.30 59-17494

Trans. of Zeitschrift für Metallkunde (West Germany) 1958, v. 49, no. 6, p. 302-311.

The primary objective was the development of an experimental set-up which would make it possible to anneal the specimens and carry out butt welding in a high vacuum. After some blank tests, cylinders of silver and gold were welded under different experimental conditions and subjected to the tension test. Best results were obtained when the welding was performed immediately following the brushing. Other experiments with a simpler butt welding device had for their objective a reduction of the pressures and deformations necessary for cold pressure welding. The deformation process on the surface of conical samples was observed and compared with the process on cylindrical samples. No effect of a shorter time of compression on the beginning of the welding could be detected. The alternating bending strength of butt welded samples of aluminum or copper was determined in rotating beam tests and compared with the values for unwelded samples. The welded samples of aluminum were practically equivalent to the unwelded ones. Elementary processes involved in cold pressure welding are discussed.

Korolev, V. M.
INCLUSIONS [BLACK SPOTS] IN MAGNESIUM-TREATED CAST IRON AND WAYS OF SUPPRESSING THEM. [1959] 2100 words.
Order from HB $4.90 HB-4651

Trans. of Liteynoye Proizvodstvo (USSR) 1959, no. 5 p. 17-18.

Study of various ways of avoiding so-called black spots as sources of weakness in nodular iron castings. Nonuniform distribution of elements in nodular iron: composition differences between black spots and the sound metal. Trials with various fluxes, single and in mixtures. Merits of cryolite: optimum quantity to be added; mechanical properties of nodular cast iron treated with cryolite. Domplete details on recommended shop practice for cryolite treatment of nickel-magnesium inoculated cupola iron. (HB abstract)

Kravcenko, C.
ON THE DETERMINATION OF THE TENSILE STRENGTH OF TUBES IN RING TENSILE TESTS. [1959].
Order from BISI £3 BISITS-1389

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1959 [v. 30] May, p. 311-314.

2 limiting values were given for the calculation of the tensile strength in ring tests on test pieces of unequal thickness. Case 1: frictionless slippage between ring test piece and bolts or frictionless turning of bolt. Case 2: absence of any slipping or turning during the tests. In order to find out which of these 2 cases will apply in practice, ring tests were carried out on specimens cut from seamless tubes with markedly eccentric bores. The tensile strength was calculated with the aid of different formulae and the results compared with the values obtained in tensile tests on straight transverse test pieces taken from the same section of tubing. The comparison showed that correct results will be obtained in ring tensile tests, when the relevant formula applying to "Case 2" is used. From this basic case we

derived the rules governing the correct determination of the tensile strength of the material and welded joint in ring tensile tests. (Author's summary)

Ksendzyk, G. V.
VARIATION OF HYDRAULIC RESISTANCE OF SINTER BED DURING SINTERING PROCESS. [1959] 3300 words.
Order from HB $7.80 HB-4632

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedeniy]. Chern[aya] Metal[lurgiya] (USSR) 1958, no. 7, p. 3-16.

Study of variation in temperature and suction in beds of fluxed and unfluxed sinter. New method of calculating the aerodynamic resistance of beds during sintering. Experimental technique. Data on resistance of sintering charge and of sinter. Bed zones limiting the sintering rate. Amount of air consumed in sintering. Temperature conditions in sintering. Vertical sintering rate and ways of increasing it. How to remedy a deficiency of heat in the upper layers of the sinter bed. (HB abstract)

Lifshits, S. I.
PRODUCTION OF VARIOUS STEELS IN BASIC CONVERTERS BY TOP BLOWING WITH OXYGEN [Proizvodstvo Razlichnykh Staley v Osnovnykh Konverterakh pri Produvke Kislorodom Sverkhu]. [1959] 3400 words.
Order from HB $7.85 HB-4667

Trans. of Stal' (USSR) 1958, v. 18, no. 11, p. 980-983.

Melting practices for various steels, rimmed and killed, in 28-ton capacity basic converters by top blowing with oxygen, and comparison of their properties with those of corresponding open-hearth steels. Data on production of 14,500 tons of crane-rail steel containing 0.55-0.65% C, 0.7-0.9 Mn, 0.15-0.30 Si, 0.055 P max., 0.050 S max. Statistical analysis of composition of over 1000 blows. Production of a 0.20-0.29% C, 1.2-1.6 Mn, 0.6-0.9 Si, max. 0.050 P and S ea. alloy steel. Mech. properties. Production of rimmed steel Sv-08 for electrode wire (0.10% C max. 0.40-0.55 Mn, 0.03 Si max., 0.038 P and S ea. max); and of telegraph wire steel T containing 0.11% C, max., 0.50 Mn max., 0.045 P max., 0.050 S max. Production experience with steel for seamless drawn tubing (0.10 and 0.20% C) and for automobile axles. Advisability of further studies directed at improved desulfurization to enable the use of any basic iron, and at dependably blocking the carbon on the way down. (HB abstract)

Madono, S.
PATTERNS OF OXIDE SKINS ON LIQUID CAST IRON. [1959] 3100 words.
Order from HB $4.80 HB-4666

Trans. of Giesserei (West Germany) 1957, v. 44, no. 24, p. 714-718.

Study of origin of oxide film on molten cast iron and of relationship between the shifting surface patterns and the nature of the melt. Composition of oxide film. Variability of patterns; the four basic ones. Influence of temperature and iron composition. $FeO-SiO_2$ phase diagram. Reaction between oxide film and molten iron. System of oxide skin patterns related to $FeO-SiO_2$ phase diagram. (HB abstract)

Novikov, I. I. and others.
USE OF VIBRATIONS DURING SOLIDIFICATION [OF ALLOYS] TO ELIMINATE HOT TEARS. [1959] 1400 words.
Order from HB $3.75 HB-4753

Trans. of Liteynoye Proizvodstvo (USSR) 1958, no. 1, p. 7-8.

Investigation into effect of vibrations on hot tearing of alloys in process of solidifying. Experimental setup. Influence of vibration frequency on development of hot tears: tears healed at subcritical vs. critical vibration frequencies. Results of microexamination of healed tears. Benefits derived from vibrating: fewer hot tears; wider use (e.g. for high-strength alloys) of permanent mold casting; better filling of mold contours; better degassing of melt. How to determine the critical frequency and the best amplitude of vibrations. Ways in which surface roughness of vibrated castings can be overcome in many instances. (HB abstract)

Orlova, T. I.
MODIFICATION OF HEAT-STABLE ALLOYS WITH AN Al-Si BASE (Molifitsirovaniye Zharoprochnykh Splavov na Osnove Al-Si). [1959] [11]p. 12 refs. (foreign text included).
Order from LC or SLA mi$2.40, ph$3.30 59-17623

Trans. of Liteynoye Proizvodstvo (USSR) 1958, no. 4, p. 31-32.

This is an abstract, or translation, of a French-language article published in "Fonderie", No. 141, 1957. There are 4 figures and 12 non-Soviet references.

Platzer, F.
NEW METHODS OF PLASTIC DEFORMATION IN THE WORKING OF METALS. [1959].
Order from BISI £6 BISITS-918

Trans. of Berg- u[nd] Hüttenmänn[ische] Monatsh[efte] (Austria) 1957 [v. 102] Apr, p. 115-125.

A lecture. Reductions in area of 25-35% are usual in modern rolling mills. If higher reductions, e.g. 80% and more, could be employed, the rolling mills would be kept very much smaller and savings in production costs and capital outlay would be made. The author discusses the various principles of the high-reduction mill, such as the Pilger mill, the Krause mill, and the Sendzimir planetary mill and describes in general terms a new type of planetary mill that he calls "Abrollwalzwerk". The design principles of a number of modifications of this rolling mill are outlined. (JISI Abstract)

Ridgion, J. M.
BLAST ENRICHMENT AND OIL INJECTION IN BLAST FURNACES. [1958] 13p. 1 ref.
Order from SLA mi$2.40, ph$3.30 59-10897

Trans. of Centre [de] Document[ation] Siderurg[ique]. Circulaire d'Informations Techniques (France) 1957, v. 14, no. 2, p. 289-295.

Sabiyev, M. P.
WAYS OF REDUCING THE TOP DISCARD OF HEAVY RIMMED-STEEL INGOTS [Puti Snizheniya Golovnoy Obrezi Tyazhelykh Slitkov Kipyashchikh Staley] [1959] 2900 words.
Order from HB $6.70 HB-4720

Trans. of Stal' (USSR) 1958, v. 18, no. 12, p. 1089-1095.

Motion of rimming steel in open molds and after capping. Sulfur inclusions and blowholes in upper part of ingot. Data on distribution of C, Mn, Si, P, and S in 14-ton rimmed-steel ingots at ten different levels. Undesirable effects of prolonged boiling of steel in mold, and of capping the latter, and how to prevent such effects. Study of ways of obtaining rolled stock of good surface quality, especially stock free from laminations, from large rimmed-steel ingots. Best deoxidizing practice for steel to be capped, and most advantageous rate of filling molds for big rimmed-steel ingots. (HB abstract)

Vero, J. A.
SEPARATION OF HYDROGEN ELIMINATION FROM HYDROGEN UPTAKE IN OPEN-HEARTH STEELMAKING. [1959] 1200 words.
Order from HB $2.80 HB-4625

Trans. of Neue Hutte (East Germany) 1957, v. 2, no. 10, p. 605-606.

Calculation of rate of hydrogen absorption by steel bath from unburnt gases. Calculation of rate of hydrogen elimination from bath on the basis of the carbon drop and the original hydrogen content, e.g. at meltdown. Author's formula. Correlation of calculated values with published information. Critique of a recent American (MIT) paper on the same subject. (HB abstract)

Voloshkevich, G. Z.
ELECTRO-SLAG WELDING. [1959] 3300 words.
Order from HB $7.75 HB-4607

Trans. of Avtom[aticheskaya] Svarka (USSR) 1953, v. 6, no. 6, p. 3-10.

Classic paper on the salient features of electro-slag welding (vertical welding of plate heavier than 30 mm or 0.12 in), based on comparison with submerged arc welding. General principle of process. Temperature stability of weld puddle: variation of heat liberation and heat transfer rates with mean temperature of slag bath. Distribution of the heat liberated in the slag bath on passage of electric current through it. Fusion of parent metal. Prerequisites to complete fusion of weld to parent metals. Long and short slags and results obtained with them. Possibility of welding sections up to 200 mm (8 in) thick, with a single electrode in one pass. Use of two oscillating electrodes. Macrosection of electro-slag butt weld in 150 mm plate. Features distinguishing electroslag from arc welding: liberation of gases; flux consumption; power requirement; penetration at edges; use of a.c.; single-pass welds in 8-inch plate; weld porosity; edge preparation; weld distortion. Practical applications found for electro-slag welding. (HB abstract).

Vorontsov, B. N. and Shul'pin, M. F.
EFFECTIVE CONTROL OF THE QUALITY OF WORK IN PLANT LABORATORIES (Effektivnyy Kontrol' Kachestva Ravoty Zavodskikh Lavoratoriy). [1959] [10]p. F-TS-9029/V.
Order from LC or SLA mi$1.80, ph$1.80 59-18107

Trans. of Izmeritel'naya Tekhnika (USSR) 1956, no. 2, p. 57-61.

Willems, J. and Quade, G.
USE OF FLUID-BED PROCESS WITH HYDROGEN- AND CARBON MONOXIDE-CONTAINING GASES FOR THE REDUCTION OF IRON ORES. [1959] 5200 words.
Order from HB $12.75 HB-4661

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 15, p. 1058-1064.

Fundamentals of fluidized-bed process. Underlying theory- equilibria in reduction of iron ores by hydrogen and carbon monoxide; system iron-oxygen-carbon in presence of solid carbon. Evaluation of existing processes for fluid-bed reduction of iron ores; H-Iron; Shipley: A. D. Little-Lewis; Stelling; and the German-developed CO-C-Iron processes. Their economics; importance of source of available energy for selection of any particular process. Discussion: Data on other experiments on fluid-bed reduction. (HB abstract)

Zaytseva, L. P.
ELECTROLYTIC POLISHING OF MICROSECTIONS OF STEEL AND CAST IRON IN A PHOSPHORIC-CHROMIC ACID ELECTROLYTE. [1959] 2300 words.
Order from HB $5.75 HB-4469

Trans. of Zavodskaya Laboratoriya (USSR) 1955, v. 21, no. 4, p. 443-447.

Experimental work on the electropolishing of carbon, low alloy, high alloy steels, and white, gray, and malleable cast irons with the use of a phosphoric + chromic acid electrolyte containing no sulfuric acid. Polishing setup and procedure. Preparation, composition, and performance of electrolyte which gives good results over wide ranges of current densities and temperatures. Ranges recommended for best results. Best polishing times. Examples of polishing carbon and alloy steels; white and malleable irons. Results obtained when using the polishing electrolyte for etching; stirring of electrolyte. Appendix: Note by T. T. Drobyasko on a new tank for the etching of metallographic specimens. (HB abstract)

CN - 130 "BIG FORWARD LEAP" HEAVY TRUCK (Yuehchin P'ai Cn - 130 Hsing Tai-chung Ch'i Ch'e) tr. by M. P. [1958] 3p. H-2189A.
Order from OTS $0.50 59-11258

Trans. of Ch'i - Ch'e (Chinese People's Republic) 1958, 8 May, p. 33.

Detailed mechanical specifications are given for the CN-130 heavy truck designed and produced by the Nanking Motor Vehicle Assembly Plant. The truck has a low fuel consumption and is suitable for use on sub-standard highways. Carrying capacity is 2.5 tons.

MOTOR VEHICLES: SELECTED ARTICLES [1959] 12p. (2 illus. omitted). H-2191.
Order from OTS $0.50 59-11967

Trans. of selected articles from Ch'i-Ch'e (Chinese People's Republic) 1958, July, p. 18-21 and 38.

Pioneer work in the production of motor vehicles is being done by such installations as farm tool factories, motor vehicle repair shops, and electric machine shops. Reference is made to several types of 3-wheeled vehicles with load capacities up to 2 tons. A 3-ton trailer made of bamboo and wood is in production.

TRAFFIC CONTROL (Sluzhba Dvizheniya). 26 Feb 59 [5]p. AF 1255573.
Order from LC or SLA mi$1.80, ph$1.80 59-16325

Trans. of Grazhdanskaya Aviatsiya (USSR) 1958 [v. 15] no. 7, p. 1-2.

TRANSPORTATION, COMMUNICATIONS, AND ELECTRIC POWER IN THE USSR [NO. 19, 25 AUG 59]. [1959] [62]p. 110 refs.
Order from LC or SLA mi$3.90, ph$10.80 59-19190

Trans. of unevaluated information selected from Russian-language publications.

Contents:
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  Northern Sea route
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  General operations
  Shipbuilding
  Route and canal operations
Other transportation
  Civil air fleet
  Motor transport
Communications
  General (Administrative affairs, Union Republic communications facilities, and Radio relay lines)
  Radio
  Telephone and telegraph
  Television
Electric power
  USSR in general
  Kazakh SSR
  Molavian
  RSFSR (East Siberia, Ural, and Volga)
  Ukrainian SSR
(See also 59-18395, 59-18844)

Caire, Daniel
THE RUSSIAN RAILWAYS, AND THE 25,000V 50 CYCLE SINGLE-PHASE CC TYPE LOCOMOTIVES BUILT FOR THE RAILWAYS OF THE USSR BY THE GROUP OF FRENCH CONSTRUCTOR FOR THE EXPORT OF TRACTION EQUIPMENT: ALSTHOM - FORGES ET ACIÉRIES DU CREUSÔT (SFAC) - FORGES ET ATELIERS DE CONSTRUCTIONS ÉLECTRIQUES DE JEUMONT - LE MATÉRIEL ÉLECTRIQUE SCHNEIDER WESTINGHOUSE (SW) (Les Chemins de Fer Russes, et les Locomotives CC Monophase 25.000 V 50 Hz Construites pour les Chemins de Fer de l'U. R. S. S. par le Groupe de Constructeurs Français pour l'Exportation du Matériel de Traction: Alsthom: Forges et Acieries du Creusot (SFAC); Forges et Ateliers de Constructions Electriques de Jeumont; Le Matériel Électrique Schneider Westinghouse (SW) tr. by A. D. S. [1958] 15p. (16 illus. omitted) H-1711.
Order from OTS $0.50 59-11222

Trans. of Association Française des Amis des Chemins de Fer. Revue (France) 1957, no. 206, first part of article p. 129-135.

The impressions of a French delegation to the USSR in 1957 are reported. The discussion is divided as follows: general impression, some indications of recent developments, new electric locomotives, the CC N 60, and diesel traction in the USSR.

Dolenko, A.
THE AUTOMOBILE EVERYBODY IS WAITING FOR (Avtmovil' Korotogo Zhdut). 22 June 59, 4p.
AF 1255885.
Order from LC or SLA mi$1.80, ph$1.80 59-18437

Trans. from Izvestiya (USSR) 1959, no. 76, p. 2, cols. 5-7.

Plans are disclosed for the mass production of a closed, streamlined 4-seater weighing 600 kg. Its maximum speed is 80 km/hr, and fuel consumption is 5 kg/100 km. The engine is a 4-cycle carburetor type 4-cylinder model with a maximum capacity of 24 to 27 hp. The "Kommunar" plant at Zaporozh'ye is being reconstructed as an assembly plant for the new car.

Dupuis, H.
WORK-PHYSIOLOGICAL CONDITIONS IN THE DRIVER CAB. [1959] [28]p.
Order from SLA mi$2.70, ph$4.80 59-17742

Trans. of VDI Berichte (West Germany) 1957, v. 25, p. [45]-56.

This paper is based on investigations undertaken jointly by the Max Planck Institute for Agricultural Labor and Farming Technique and the Max Planck Institute for Work Physiology to determine conditions of driver activity in operating an agricultural tractor. It was found that most of the results applied not only to tractors but to many types of motor vehicles, such as heavy trucks, graders, heavy buses etc. Items under consideration included body posture, lever arrangement, location of foot pedals, placement of steering wheel, shape of hand grips. In addition to experimental work in the laboratory, actual tests were run, using one driver who operated two different tractors. Body strain on the driver was determined by the respiration method and by pulse frequency measurement. In all of the tasks, the energy consumption and degree of exertion on the part of the driver could be decreased (sometimes as much as 45%) by improvement of his position.

Julien, M.-A. and Paulsen, Jean-Félix.
EXPERIMENTAL MEASURING METHOD AND DEFINITION OF THE ABSORBING POWER OF THE PNEUMATIC TIRE. [1959] [35]p.
Order from SLA mi$3.00, ph$6.30 59-17755

Trans. of S[ociete des] I[ngénieurs de l'] A[utomobile]. Journal (France) 1953, v. 26, p. 33-40.

Petrov, A. P.
THE WAYS OF SOLVING BASIC SCIENTIFIC PROBLEMS OF RAILROAD OPERATIONS IN THE USSR. 24 July 59, 26p. 21 refs. JPRS: L-971-D.
Order from OTS $0.75 59-11571

Trans. of Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Zheleznodorozhnogo Transporta. Vestnik (USSR) 1957 [v. 16] no. 4, p. 6-16.

MATERIALS

*KAUCHUK I REZINA (USSR) 1959 [VOL. 18] NO. 2, P. 1-64 (Raw and Vulcanized Rubber). [1959] 1v.
SOV-138-59-2-(1-24)/24.
Order from OTS $0.60, $3.50/6 mo. PB 141 057T-13
. Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Jones, R. and Sawczuk, A.
NONDESTRUCTIVE METHOD OF INVESTIGATION OF CONCRETE; PRESENT STATE AND PROSPECTIVE DEVELOPMENT OF INTERNATIONAL INQUIRIES IN THE WORLD (Nieniszchzce Metody Badania Betonu; Stan Obecny i Perpektywy Rozwoju w Swietle Ankiety Miedzynarodowej). [1959] [13]p.
Order from SLA mi$2.40, ph$3.30 59-17237

Trans. from Inzynieria i Budownictwo (Poland) 1959, no. 1.

During 1954 a Working Group was organized at the International Union of Laboratories for Investigation of Materials and Structures whose goal was the development and coordination of investigations in the field of the nondestructive method of investigation of concrete. To meet this goal, a questionnaire was prepared which was submitted in 1957 to all of the interested laboratories and organizations. Analysis of the 126 replies received revealed that with the methods of resonance, impulses, and measurement of the hardness, no fundamental change is to be expected in the near future with respect to constructional developments or the precision of the evaluation of the resistance.

Ceramics and Refractories

DESIGN FOR A CHINESE REFRACTORY MATERIAL PLANT WITH A DAILY OUTPUT OF TWO TONS OF CERAMICS. 12 Aug 59, 11p. JPRS: 868-D.
Order from OTS $0.50 59-11763

Trans. of Chung-kuo Ch'ing Kung-yeh (Chinese People's Republic) 1958, no. 23, p. 12-14.

This design uses three kilns, which can produce porcelain, earthenware and refractory bricks simultaneously without resort to electricity or purchase of machinery and equipment from the outside. The capital expenditure is small, and this design can be referred to by the people's communes everywhere in their efforts to set up factories. (Author)

Cocco, A.
CONSIDERATION OF THE CHEMICAL ATTACK OF REFRACTORIES BY STEEL BATHS DURING METALLURGICAL PROCESSES. [1959].
Order from BISI 4 5s BISITS-1325

Trans. of Fonderia Ital[iana] 1959, Feb, p. 47-51.

Fuels, Lubricants, and Hydraulic Fluids

HEAT INSULATION OF PIPELINES AND CONTAINERS FOR LIQUEFIED GASES. [1959] 1p.
Order from ATS $1.65 ATS-13L33R

Trans. of Kislorod (USSR) 1959, v. 12, no. 1, p. 26.

Mignotte, F.
THE MANURE GAS (La Gaz de Fumier). [1959] [10]p.
Order from SLA mi$1.80, ph$1.80 59-17232

Trans. of Culture (Canada) 1952 [v. 13] July, Aug, p. 14-16.

The production of biological methane (i.e. production of gas by fermentation of animal and vegetable wastes which contain carbohydrates) is discussed. Practical directions are given for installation of vats and accessory fittings. The heat power of manure gas per cubic meter is from 4500 to 6000 calories. It is estimated that one ton of manure in the course of a fermentation cycle would yield 50 to 60 cubic meters of gas (one cow produces 10 tons of manure per year). Various practical uses of the gas in the farm household are described.

Tillwich, Maria.
NEW ASPECTS IN RESEARCH ON WATCH LUBRICANTS. [1959] 16p. 8 refs.
Order from SLA mi$2.40, ph$3.30 59-17779

Trans. of Zeitschrift für Instrumentenkunde (Germany) 1957, v. 65, no. 4, p. 73-77.

Lecture delivered at a meeting on problems of horology and precision mechanics sponsored by the Institute of Technology, Stuttgart.

Leather and Textiles

Grishin, P. F.
N. A. VASIL'YEV'S THEORY OF DRAFTING (Teoriya Vytyazhki po N. A. Vasil'yevu) tr. by M. Slade. [1956] [23]p. (3 figs. tables equations omitted) Trans. no. 2751.
Order from SLA mi$2.70, ph$4.80 59-15037

Trans. of Izvestiya Khlopchatobumazhnoy Promyshlennost' (USSR) 1932, v. 2, no. 2, p. 19-22 and no. 3, p. 36-39.

Mazov, Yu. A.
ON THE DEFORMATION OF UNDRAWN CAPRON FIBER. Aug 58 [4]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17430

Trans. of Tekstil'naya Promyshlennost' (USSR) 1957, v. 17, no. 12, p. 16-17.

Investigations are described which indicate the desirability of wetting of fibers before drawing in the production of Capron yarn.

Prett, K.
ACID PEROXIDE BLEACHING. Nov 58 [6]p.
Order from SLA mi$1.80, ph$1.80 59-17762

Trans. of Melliand Textilberichte (West Germany) 1958, v. 39, no. 9, p. 999-1001.

After a review of the disadvantages of the alkaline bleach and boil-off, a new system for the bleaching of textile fibers is described which is based on the direct conversion of hydrogen peroxide with acetic acid anhydride in dilute bleaching solutions to monoperacetic acid with the use of a catalyst. The system has the advantage that, like the chlorite bleach, it can be applied in acid solutions.

Paints and Finishes

Baroyants, G. A.
THE PROTECTION OF DAMAGED PLACES IN THE ENAMEL OF APPARATUS BY MEANS OF AN ACID-RESISTANT PASTE. [1959].
Order from ATS $1.50 ATS-58L32R

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1958, no. 5, p. 314.

Hilgetag, G. and Teichmann, H.
CONTRIBUTIONS TO THE CHEMISTRY OF THIOPHOSPHATES. PT. III. SODIUM O, S-DIMETHYL THIOPHOSPHATE. [1959] 7p.
Order from ATS $8.55 ATS-30L32G

Trans. of J[ournal für] Prakt[ische] Chem[ie] (East Germany) 1959, ser. 4, v. 8, p. 97-103.

Lesche, H.
THE PREPARATION OF LEAD CHROMATE. 19 Aug 59, 3p.
Order from SLA mi$1.80, ph$1.80 59-17802

Trans. of Farbe u[nd] Lack (West Germany) 1959, v. 65, no. 2, p. 79-[80].

This paper concerns the technical production of chrome yellow. Some attempts to produce light-fast lead chromates are described.

Shishmareva, L. A. [Yakovleya, O. Ya., and Bur'yanenko, V. N.].
PHOSPHATING OF IRON AND STEEL ARTICLES [Fosfatirovaniye Chernykh Metallov]. [1959] 1300 words.
Order from HB $3.80 HB-4641

Trans. of Stanki i Instrument (USSR) 1958 [v. 29] no. 10, p. 32-33.

Data on industrially used phosphate coatings intended to provide anchorage for paint films. Two bath compositions for hot phosphating, one of them also suitable for spray coating. Two cold phosphating baths: compositions, etc. Recommended test for porosity. (HB abstract)

Photographic Materials

Broun, Zh. L.
INVESTIGATION OF THE PROCESS OF FORMATION OF PRIMARY CENTERS IN THE REAL EMULSION. [1959] 9p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17696

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 4, p. 246-250.

The formation of impurity centers during finishing of the real photographic emulsion was investigated by E. A. Kirillov's differential spectrophotometric method. It was shown that the spectral curves show a peculiar change of the real emulsion at different finishing times. The change can be explained by the redistribution of the elementary silver in the impurity centers. The assumption that the mechanism of the silver redistribution process in impurity centers is similar to the Ostwald ripening was expressed. The assumption was expressed that the decrease in the concentration of small grains is one of the reasons for the decrease in the speed of the emulsion after the maximum. (Author's conclusions)

Kartuzhanskiy, A. L. and Soltitskiy, B. P.
REVIEW OF SOVIET WORK ON THE PHOTOGRAPHIC EFFECT OF IONIZING PARTICLES. [1959] 17p. 53 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17605

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 4, p. 299-305.

Ratner, I. M.
ROLE OF NUCLEI DURING FINISHING OF PHOTOGRAPHIC EMULSIONS. [1959] 9p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17697

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 4, p. 251-255.

It was determined that the formation of the surface grain nuclei before the finishing begins provides a more uniform growth of centers during finishing and, as can be concluded, an increase in the maximum speed of emulsion reached during finishing. It was shown that the effect of gold sensitization for an emulsion with artificially grown nuclei is the same as for ordinary emulsions. The effect of temperature and pH of the medium on the formation and stability of nuclei was investigated. (Author's conclusions)

Rodicheva, M. F.
ANALYSIS OF NUCLEAR PHOTOGRAPHIC EMULSIONS FOR ELEMENTS. [1959] 2p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-17604

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 4, p. 286.

The composition by elements of a "standard" type-R supportless emulsion for 58% relative humidity is tabulated.

Rösch, S.
MEASUREMENT OF COLOR REPRODUCTION CHARACTERISTICS OF MINIATURE-TYPE COLOR FILMS. [1959] 13p. 10 refs.
Order from SLA mi$2.40, ph$3.30 59-17722

Trans. of Phot[ographische] Korr[espondenz] (Austria) 1959, v. 95, no. 1, p. 7-13; no. 2, p. 28-30.

A system of 10 numerical designations is proposed for denoting the quality of color reproduction.

Plastics

PLASTIC MATERIALS IN TECHNOLOGY AND LIFE (Plasticheskiye Massy v Tekhnike i Bytu) tr. by Andrew Levchenko, Jr. [1958] [4]p. H-2231.
Order from OTS $0.50 59-11912

Trans. of Kraznaya Zvezda (USSR) 1958, no. 96, p. 3.

The uses of plastics and synthetic fabrics are described in popular terms. The Likhacheva factory in Moscow has prepared an experimental automobile racer with a plastic body possessing the same durability as steel. The "Moskvich" and "Volga" cars will in the near future be produced with plastic bodies. Vinyl engraving plates and type are especially satisfactory: plastic type withstands nearly 150,000 impressions. Plastics can be used for construction of portable buildings, for packaging, and for durable clothing.

A PROCEDURE FOR THE PREPARATION OF ARTIFICIAL MASSES FROM POLYVINYL CHLORIDE. [1959] [4]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17885

Trans. of German patent 601,323, cl. 39b, gr. 4-02, A 66,660 IV a/39b, pub. 13 Aug 34, granting announced 26 July 34, pat. since 22 July 32, claim being laid to priority of filing in the U. S. on 21 July 31, by General Electric Company, Berlin.

The present invention is concerned with the preparation of artificial substances which, besides being resistant to acids, alkalis, and water, are not easily combustible, can be pressed into shapes, hardened through heating, or rendered either plastic or flexible in the desired degree. In the procedure proposed, certain condensation products of polyatomic alcohols and polyatomic acids are employed together with polymerized vinyl chloride in the preparation of artificial resins. (Extracted from the report)

Bandel, W.
INFRA-RED INVESTIGATIONS OF RESIN-FINISHED CELLULOSE HYDRATE FILMS. Dec 58 [15]p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-17775

Trans. of Melliand Textilberichte (West Germany) 1958, v. 39, no. 2, p. 204-211.
Another translation is available from SLA mi$2.40, ph$3.30, as 59-15067 [1959] [15]p.

The infrared absorption spectra of viscose films, finished with urea, melamine, acrylic, polyvinyl and epoxy rasins, indicate a chemical bond in the case of epoxy rasins only. It is also possible to show a reduction of free OH groups in formalin treated films. The relationship between the wash resistance of the finishing effect and the existence of a chemical combination between cellulose and resin is shown. Means of improving the finishing agent as well as the textile additive and cellulose hydrate fibre are discussed.

Patat, F.
SYMPOSIUM ON MACROMOLECULAR SUBSTANCES. I. PHYSICAL CHEMISTRY OF MACROMOLECULAR SUBSTANCES. POLYMERIZATION AND CONDENSATION IN THE COMPLEX STATE. [1959] 10p.
Order from ATS $9.95 ATS-11L32G

Trans. of Kunststoffe-Plastics (Switzerland) 1959, v. 6, no. 3, p. 297-301.

Vol'kenshteyn, M. V.
THE STRUCTURE AND MECHANICAL PROPERTIES OF AMORPHOUS POLYMERS. [1959] 4p.
Order from ATS $5.00 ATS-21L32R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 125, no. 3, p. 523-525.

Wood and Paper

PAPER AND BOARD: DETERMINATION OF RIGIDITY. July 59, [2]p. (fig. omitted).
Order from SLA mi$1.80, ph$1.80 59-17473

Trans. of Rumanian Standard STAS 4743-55, approved by the standards commission 31 May 55, effective 1 Jan 56.

WILL THERE BE ENOUGH WOOD FOR THE PROPOSED EXPANSION OF THE INDUSTRY. [1959] 8p. (map omitted).
Order from SLA mi$1.80, ph$1.80 59-17129

Trans. of Svensk Pappersmasse-tidning (Sweden) 1959, v. 5, p. 275-280.

Calistru, E., Simionescu, N., and Simionescu, C.
SOME FACTORS WITH INFLUENCE ON THE STABILITY OF VISCOSE. [1959] 33p.
Order from ATS $29.80 ATS-96L29RU

Trans. of Acad[emia] Rep[ublicii] Populare Romine. Filiala Iasi. Studii [si] Cercetari Stiint[ifice]. Chim[ie] (Rumania) 1956, v. 7, no. 2, p. 149-190.

Deyev, L. T.
CORROSION OF WATER ECONOMIZERS OPERATING ON SULFITE-TREATED FEED WATER. [1959] 6p.
Order from ATS $7.35 ATS-51L31R

Trans. of Akad[emiya] Nauk SSSR. Energet[icheskiy] Inst[itut]. Vnutrikotlovyye Fiz[iko]-Khim[icheskiye] Protessy, 1957, p. 334-338.

Junghans, G. and Rapp, A.
SOME MILL EXPERIMENTS WITH BEATER ADDITIVES OF THE GALACTOMANNAN TYPE. Aug 59, 9p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-17704

Trans. of Wochenbl[att fllr] Papierfabr[ikation] (West Germany) 1958, v. 86, no. 11/12, p. 526-530.

Supplementing the data published so far in German literature relating to the use of galactomannans and laboratory test results, some data are provided from actual operation in different paper mills. Modified galactomannans which provided a homogeneous solution were employed. It was possible to prove that the hot-soluble types possess a better action than the cold-soluble ones, with regard to increases in mechanical strength. Furthermore a special type has been developed which greatly increases the retention at the wire of fillers and fibres, whilst simultaneously improving mechanical strength. It is now possible to employ hot-soluble galactomannans quite safely thanks to the development of a suitable, continuously-operating solutionising device which functions reliably without any additional attention. (Author's summary)

Kollman, Franz.
ABOUT VARIABLES IN THE RHEOLOGICAL PROPERTIES OF WOOD AND WOODWORK MATERIAL UNDER LOADING PERPENDICULAR TO THE GRAIN (TRANSVERSE LOADING) (Uber Unterschiede im Rheologischen Verhalten von Holz und Holzwerkstoffen bei Querdruckbelastung) tr. by James T. Rice. 26 Nov 58 [16]p. (15 figs. 2 tables omitted) 7 refs.
Order from SLA mi$2.40, ph$3.30 59-10331

Trans. of Munich U. Inst. for Wood Research. Report (West Germany) 1956, no. 1/2, p. 49-54.

Samuelson, Olof.
A COMPARISON BETWEEN THE REACTIONS OCCURRING DURING SULPHITE AND SULPHATE COOKING. [1959] [18]p. 26 refs.
Order from SLA mi$2.40, ph$3.30 59-17714

Trans. of Svensk Pappers-tidning (Sweden) 1958, v. 61, no. 17, p. 531-539.

A lecture, which attempts to piece together the individual investigations (published and unpublished) carried out at the Institute of Applied Chemistry at

Chalmers Institute of Technology. The data presented show that there is a distinct similarity between sulphite cooking and sulphate cooking as far as the reactions of lignin are concerned. The main reactions are certainly essentially different but the excess sulphur is introduced during the sulphite cook in a way similar to that in which sulphur is introduced into the lignin during the sulphate cook.

Ullman, Uddo.
MEASUREMENT OF THE INITIAL WET-STRENGTH OF PAPER PULPS AS A PRACTICAL METHOD OF CONTROL (Erfarenheter av Vatstyrkemätning som Driftskontrollmetod). [1959] [21]p. (14 figs. omitted) 26 refs. Trans. no. 4190.
Order from SLA mi$2.70, ph$4.80 59-17515

Trans. of Svensk Pappers-tidning (Sweden) 1958, v. 61, no. 14, p. 445-453.
Other translations are available from SLA mi$2.40, ph$3.30 as 59-15179 [1959] [17]p. and from ATS $12.95 as ATS-82K25S [1958] 15p.

Experiences of measurements of the initial wet-strength at a pulp and paper mill are reviewed. The literature in this field is briefly surveyed. The correlation between the frequency of breaks in paper machines and the wet-strength of pulps is discussed, together with the possibility of detecting such a correlation. The relations between the efficiency of the paper machine and the sheet properties, and between the sheet properties and the pulp properties are then discussed. The demands on a system for testing these pulp properties are also considered. The application of the wet-strength test as a routine test and in research and development work is reviewed, as well as the use of the method for checking the beating properties of pulps. Finally, the instrument is described, and the article concludes with a review of the special features of handsheet making and the corrections to standard basis weight and standard dryness in the sheet.

Zycha, H. and Härtel, W.
WOOD IMPREGNATION WITH COPPER-SULPHATE (Zur Frage der Holzimprägnierung mit Kupfersulfat) tr. by W. Knie. [1959] [16]p. (summary omitted) 13 refs. Trans. no. 4216.
Order from SLA mi$2.40, ph$3.30 59-17785

Partial trans. of Biologische Bundesanstalt für Land- und Forstwirtschaft, Berlin-Dahlem. Mitt[eilungen] (West Germany) 1956, no. 86, p. 49-63.

MATHEMATICS

AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA MATEMATICHESKAYA, 1959, V. 23, NO. 2, P. 157-312 (News of the Academy of Sciences of the USSR. Mathematics Series). [1959] 11p. SOV-38-23-2-(1-10)/10.
Order from OTS $0.50, $3.00/6 mo. PB 141 031T-9
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

MATEMATICHESKIY SBORNIK (USSR) 1959, V. 47, NO. 2, P. 145-264 (Mathematics Symposium). [1959] 7p. SOV-39-47-2-(1-6)/6.
Order from OTS $0.50, $3.00/6 mo. PB 141 033T-18
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

Burov, V. N.
SOME EFFECTIVE SOLUTION METHODS FOR TCHEBYSHEV PROBLEMS OF BEST APPROXIMATION. [1959] 4p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17803

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1957, v. 113 [no. 4] p. 731-733.

Wiman, A.
ON THE REAL ZEROS OF ALMOST ALL DERIVATIVES OF CERTAIN ENTIRE FUNCTIONS. [1959] 8p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-17244

Trans. of Math[ematische] Annalen (Germany) 1937, v. 114, p. 617-621.

Pashkovskiy, [S] F.
THE POSITION OF THE (e)-POINTS OF POLYNOMIALS OF BEST APPROXIMATION. [1959] 4p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-17804

Trans. of Akad[emiya] Nauk [SSSR]. Doklady, 1957, v. 117, no. 4, p. 576-577.

Computing Devices

Muroga, Saburo and Takashima, Kensuke.
SYSTEM AND LOGICAL DESIGN OF THE PARAMETRON DIGITAL COMPUTER MUSASINO-1. [1959] 37p. 11 refs.
Order from SLA mi$3.00, ph$6.30 59-17793

Trans. of Denki Tsushin Gakkai Zasshi (Japan) 1958, v. 41, no. 11, p. 1132-1141.

The large-scale digital computer with the Japanese innovations, the parametrons, was completed in March, 1957 in the Electrical Communication Laboratory of the Nippon Telegraph and Telephone Public Corporation. This paper describes general features of the system, the logical design, the functions and the operations of the computer.

Takashima, Kensuke, Muroga, Saburo, and Nishida, Kazuo.
ENGINEERING DESCRIPTION OF THE PARAMETRON DIGITAL COMPUTER MUSASINO-1. [1959] 32p. 6 refs.
Order from SLA mi$3.00, ph$6.30 59-17792

Trans. of Denki Tsushin Gakkai Zasshi (Japan) 1958, v. 41, no. 11, p. 1141-1149.

Engineering features and maintenance experiences of the parametron computer MUSASINO-1 are presented. The parametron circuit is composed of a pair of the ferrite toroidal cores whose outer diameter, inner diameter and thickness are 4, 2, and 1 mm, respectively and on which a wire of nine turns is wound, a capacitor of 5000 pF and a coupling resistor of 300 ohms are connected. Throughout the arithmetic and control units, about 5400 parametrons of this size are used for the memory. To keep the uniformity of oscillation voltages of all the parametrons within a range of 10%, 10,000 ferrite cores are selected from an ensemble of 50,000 cores. The details on the process of this selection and the results are described.

Yamada, Shigeharu, Bessho, Teruhiko, and Koshiba, Tsuneori.
MAGNETIC CORE MEMORY OF THE PARAMETRON DIGITAL COMPUTER MUSASINO-1. [1959] 24p. 8 refs.
Order from SLA mi$2.70, ph$4.80 59-17794

Trans. of Denki Tsushin Gakkai Zasshi (Japan) 1958, v. 41, no. 11, p. 1149-1155.

Dimensions of the ferrite cores are, 2.1 mm in outside diameter, 1.2 mm in an inner diameter and 0.6 mm in thickness. The cores have a non-rectangular magnetization curve. The binary information is written into the cores by an asymmetry of a magnetic field of two alternating currents, one with 1.2 Mc and the other with 600 kc.

MECHANICS

Regel', V. R., Berezhkova, G. V., and Dubov, G. A
NEW INSTRUMENT FOR MICROMECHANICAL TESTING AND ITS APPLICATION FOR INVESTIGATING THE MECHANICAL PROPERTIES OF POLYMERS. [1959] 10p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17602

Trans. of *Zavodskaya Laboratoriya (USSR) 1959, v. 25, no. 1, p. 101-105.

A description is presented of the improved instrument, which was demonstrated at the 1958 Brussels World Fair, for plotting curves of compression and extension, curves of relaxation of strain and stress, or even curves of creep. The machine includes a photoelectric-optical dynamometer (Zhur. Tekh. Fiz. 25: 2542, 1955) which operates on the principle of photoelasticity and the photoelectric effect.

Stovas, M. V.
POTENTIAL OF DEFORMATION FORCES AND ITS VARIATION WITH THE ROTATION REGIME OF AN ELLIPSOID. 9 June 59, 15p. (6 figs. omitted). JPRS: L-1694-D.
Order from OTS $0.50 59-11640

Trans. of Leningrad U. Vestnik (USSR) 1959, no. 1, p. 119-129.

Aerodynamics and Pneumatics

Dmitriyev, V. N. and Chernyshev, V. I.
CALCULATION OF TIME CHARACTERISTICS OF PNEUMATIC FLOW CHAMBERS. [1959] [18]p. 4 refs.
Order from OTS $0.50 59-21148

Trans. of *Avtomatika i Telemekhanika (USSR) 1958, v. 19, no. 12, p. [1118]-1125.

Nonlinear differential equations for pressure change in a pneumatic flow chamber are integrated on the assumption that any of the output values change nonlinearly. Examples of computation of time characteristics are given, and they are compared with time characteristics obtained experimentally.

Mattei, J.
THE MEASUREMENTS OF SHOCK WAVES (Les Mesures d'Ondes de Choc). [1959] 17p. (9 figs. omitted) 8 refs. F-TS-9122/III.
Order from LC or SLA mi$2.40, ph$3.30 59-14138

Trans. of Recherche Aeronautique (France) 1956, no. 50, p. 39-44.

After a schematic review of the evolution of pressure in various types of perturbations and a simple representation of the phenomenon by a mathematical curve, the report discusses, on the basis of three typical examples, the various conditions that a suitable measuring instrument must satisfy. The discussion covers problems in developing a series of pressure measurements, useful on the ground and in flight and able to furnish a correct criterion for the complex perturbation under investigation.

METALLURGY

*FIZIKA METALLOV I METALLOVEDENIYE (USSR) 1959, V. 7, NO. 2, P. 161-320 (Physics of Metals and Metallography). [1959] 1v. SOV-126-7-2-(1-39)/39.
Order from OTS $0.80, $4.75/year PB 141 126T-9
Foreign $1.05, $6.25/year

Consists of abstracts in English.

*METALLOVEDENIYE I TERMICHESKAYA OBRABOTKA METALLOV (USSR) 1959, NO. 3, P. 2-64 (Metallography and Heat Treatment of Metals). [1959] 1v. SOV-129-59-3-(1-16)/16.
Order from OTS $0.60, $3.50/6 mo. PB 141 131T-11
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

*METALLURG (USSR) 1959, NO. 2, P. 1-40 (Metallurgist). [1959] 1v. SOV-130-54-2-(1-17)/17.
Order from OTS $0.60, $3.50/6 mo. PB 141 132T-12
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Chaudron, Georges.
NEW PROPERTIES AND APPLICATIONS OF METALS OF VERY HIGH PURITY (Nouvelles Propriétés et Applications des Métaux de Haute Pureté). [1959] [31]p. 43 refs.
Order from SLA mi$3.00, ph$6.30 59-17777

Trans. of Revue de Métallurgie (France) 1958, v. 55, p. 407-416.

Lecture describing investigations carried out in the Vitry laboratory of the National Center of Scientific Research concerning the purification of common metals.

Moldavskiy, O. D. and Pronov, A. P.
EFFECT OF ALUMINUM, SILICON, AND CHROMIUM ON PRIMARY STRUCTURE OF LOW-CARBON STEEL. [1959] 1200 words.
Order from HB $2.90 HB-4738

Trans. of Akad[emiya] Nauk SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Topl[ivo] 1959, no. 2, p. 40-42.

Danilov's equation expressing the probability of nucleation in solidification of a supercooled liquid: predictions as to effect of alloying elements on primary structure of steel, made on basis of this equation. Procedures in laboratory melts for study of effects of Al (under and over 0.15%), Si (015-3%), and CR (0.5-3%) on as-cast structure of low-carbon steel and properties in solidification. Reasons for dissimilar effects of aluminum and alumina on grain size. Cha Change in interfacial tension between liquid metal and growing crystals in relation to change in primary grain size. Oxygen and nitrogen contents of low-carbon steel containing from 0.12 to 1.60% Al. (HB abstract)

Nony, M. and Dreyer, K. L.
THE LATTICE CONSTITUTION AND THE PROPERTY CHANGES OF COPPER-RICH COPPER-SILICON AND COPPER-MANGANESE-SILICON ALLOYS (Uber den Gefugeaufbau und die Eigenschaftsanderungen von Kupferreichen Kupfer-Silizium- und Kupfer-Mangan-Silizium-Legierungen). [1959] [36]p. 13 refs.
Order from SLA mi$3.00, ph$6.30 59-17772

Trans. of Metall (West Germany) 1955, v. 9, no. 21/22, p. 947-954.

Palme, R.
PROCEDINGS IN SINTERING METALLIC INDUSTRIAL MATERIALS (Die Vorgänge bei der Sinterung Metallischer Werkstoffe). [1959] [9]p. 7 refs. (foreign text included).
Order from SLA mi$1.80, ph$1.80 59-17625

Trans. of Metall (West Germany) 1957, v. 11, no. 1, p. 8-9.

The basic processes are described which take place during the sintering of single-phase metals, whereby the effect of the sintering temperature is taken into detailed consideration. The practical effect of these processes is shown with the aid of examples. Various causes of shrinkage during the sintering of metal powders are discussed.

Panu, I. H.
CONTRIBUTIONS TO THE KINETIC STUDY OF FLOTATION. [1959] 7p.
Order from ATS $9.75 ATS-081 318U

Trans. of Acad[emia] Rep[ublicii] Populare Romine. Comun[icarile] (Rumania) 1956, v. 6, no. 1, p. 115-122.

Pomey, J[acques, Royez, Alain, and Georges, Jean Pol].
METALLOGRAPHIC USES OF HOT HARDNESS. [1959] [7]p.
Order from SLA mi$1.80, ph$1.80 59-17737

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1957, v. 245, no. 17, p. 1424-1427.

Raub, Ernest, and Plate, Werner.
THE BEHAVIOUR OF COMPACTED BINARY MIXTURES OF GOLD AND SILVER POWDERS ON SINTERING WITH OTHER METALLIC POWDERS, tr. by F. Hudswell. Aug 55 [20]p. 5 refs.
A. E. R. E. Lib/Trans. 563.
Order from SLA mi$2.40, ph$3.30 59-17499

Trans. of Zeitschrift für Metallkunde (West Germany) 1949, v. 40, no. 6, p. 206-214.

The behaviour on sintering is investigated for a large number of binary mixtures of gold and silver powders with other metallic powders which were pressed at 7000 kg/cm^2. The course of the linear thermal expansion and the specific resistance of the pressings, plotted against the temperature of sintering, shows no characteristic deviations from those of pressings of the pure metals when there are no reactions between the two metals. The properties of the pressings of binary mixtures can be deduced simply from those of the pure metals on sintering. The formation of mixed crystals or intermediate phases is expressed in the linear thermal expansion in a more or less strongly-marked sudden addition to the expansion as

a result of the occurrence of diffusion porosity. A slight reaction on sintering in which mixed crystals are formed is not clearly distinguished in some circumstances in the plot of the linear expansion. The measurement of the specific resistance responds to this with more sensitivity. (Author's summary)

Tylkin, M. A.
ARC SURFACING OF COMPONENTS SUBJECT TO ABRASION WITH HARD ALLOYS. [1959].
Order from BISI £2 5s BISITS-1405

Trans. of *Svarochnoye Proizv[odstvo] (USSR) 1959, no. 5, p. 35-36.

Stalinite (1.0%C, 9.5%Cr, 11.5%Mn) and Sormite (3.2%C, 30%Cr, 5.3%Ni, 1.1%Mn, 4.5%Si) ferrous alloys are described and their use in manual arc hard-facing is noted. The hardening of mill and crusher parts is outlined. The use of a B-containing alloy is also mentioned with examples. (Abstract from J. I. S. I.)

Ferrous Metals

ENGINEERING ALLOY STEELS: GRADES AND GENERAL TECHNICAL REQUIREMENTS. [1959] 12p. 11 refs.
Order from SLA mi$2.40, ph$3.30 59-15813

Trans. of Russian Standard GOST 4543-57, gr. V. 32, confirmed 4 July 57.

The present standard extends to engineering alloy, hot-rolled and forged steel up to 250 mm. in diameter or thickness, melted in open-hearth and electric furnaces. In the part of the norms for the chemical composition of the steel the standard extends also to ingots, blanks, cold-drawn steel, sheet, narrow strip wire, strip tubes, wire forgings and stampings.

Bandow, K. and Wagner, K.
A CONTRIBUTION ON DEOXIDATION AND DESULPHURIZATION IN THE CUPOLA FURNACE. [1959].
Order from BISI £5 5s BISITS-1298

Trans. of Giesserei (West Germany) 1958 [v. 45] 17 July, p. 409-417.

Bardin, I., Moskal'kov, Ye., and Shapiro, I.
THE IRON ORE BASE OF THE USSR FERROUS METALLURGY AND THE PATH OF ITS GROWTH IN 1959-1965. 27 Mar 59, 17p. JPRS L-1572-D.
Order from OTS $0.50 59-11472

Trans. of Planovoye Khozyaystvo (USSR) 1958, no. 12, p. 16-27.

Dascalu, S.
EFFECT OF MANUFACTURING PROCESS UPON THE NATURE AND AMOUNT OF NON-METALLIC INCLUSIONS IN STEEL. [1959]
Order from BISI £5 15s BISITS-1251

Trans. of Acad[emia Republicii Populare] Romine. [Centrul de Cercetari] Met[allurgice]. Studii si Cercetarii de Metalurgie (Rumania) 1958, no. 1, p. 39-52.

Decker, A.
THE DESULPHURIZATION OF BASIC-BESSEMER STEELWORKS. [1959].
Order from BISI £1 for 38 illus. £10 for text only BISITS-664

Trans. of Rev[ue] Univ[erselle des] Mines (France) 1957, May, p. 165-212.

Engell, H. J.
THE CONCENTRATION GRADIENT OF IRON-ION-VACANCIES IN WUSTITE SCALING FILMS AND THE MECHANISM OF OXIDATION OF IRON. [1959]
Order from BISI £3 BISITS-1080

Trans. of Acta M[e]tall[urgica] (U. S.) 1958 [v. 6] p. 439-445.

Hendus, H. and Wagner, C.
CHARACTERISTICS OF SUPERFICIAL LAYERS AND ELASTIC CONSTANTS OF 0.43% C STEEL DETERMINED BY X-RAY MEASUREMENTS OF STRAIN. [1959].
Order from BISI £3 10s BISITS-647

Trans. of Rev[ue de] Mét[allurgie] (France) 1955 [v. 52] Dec, p. 982-994 and Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1955, Aug, 455-461.

Jolivet, H. and Vidal, G.
VALUE OF THE RESILIENCE TEST FOR THE STUDY OF BRITTLENESS DUE TO ANNEALING (Valeur de l'Essai de Résilience pour e'Étude de la Fragilite de Revenu). [1959] [21]p. (1 table, 15 figs. omitted) 28 refs.
Order from SLA mi$2.70, ph$.480 59-17928

Trans. of Revue de Métallurgie (France) 1944, v. 41 [no. 11] p. 378-388 and p. 403-408.

Kidin, I. N.
INFLUENCE OF INDUCTION HEATING ON THE AUSTENITIC GRAIN OF CARBON STEELS. (SUMMARY). [1959].
Order from BISI £1 BISITS-1100

Trans. of Metallov[edeniye i Termicheskaya] Obra[botka] Met[allov] (USSR) 1956, no. 1, p. 40-41.

Kohler, W., Hartmann, T., and Tromel, G.
INVESTIGATIONS OF CONVERTOR BOTTOMS. [1959].
Order from BISI £6 5s BISITS-1369

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 14 May, p. 674-683.

Practice at the new dolomite plant of the August Thyssen-Hutte A. G., Duisburg-Hamborn. Vibration of converter bottoms through a vibrator plate located above. Composition of unfired and fired converter bottoms. Types of carbon in fired bottom. Operating conditions of converter and their influence upon bottom life. Influence of packing between bottom and lining. Effect of blowing on bottom life. Relationship between quality of steel and bottom wear. Economic efficiency. (Author's summary)

Kozlovskiy, I. S.
NEW STRUCTURAL LOW ALLOY STEELS. [1959] [3]p. Trans. 206.
Order from LC or SLA mi$1.80, ph$1.80 59-19313

Trans. from Vestnik Ma[s]hinostroyeniya (USSR) 1958 [v. 38] no. 2.

Kuntscher, W. and Werner, K.
WAYS OF AVOIDING THE FORMATION OF FLAKES IN STEEL. [1959] 2800 words.
Order from HB $5.80 HB-4236

Trans. of Neue Hutte (East Germany) 1957, v. 2, no. 5, p. 280-285.

A paper specially written for steelplant metallurgists who are kept too busy to follow the voluminous literature on the effect of hydrogen on flakes but would like to have a set of specific instructions on what to do when the next flake epidemic strikes. Melting unit. Sloppy practices in drying the lime. What is really required in this respect? Pertinent data. Drying of the other charging materials. Refractories and ingot mold coatings. Degassing of liquid steel; rate of carbon drop at end of oxidizing period for lowest possible hydrogen content in O. H. steel. Degassing of solid steel by various practices. (HB abstract)

Lueg, W. and Funke, P.
THE BEHAVIOUR AT THE YIELD-POINT OF SKIN-PASSED DEEP-DRAWING STEEL SHEETS AFTER AGEING. [1959].
Order from BISI £5 5s BISITS-1411

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 9 July, p. 969-976.

Muller-Trimbusch, K.
FIRST BLAST-FURNACE GAS TURBINE PLANT AT A GERMAN STEELWORKS. [1959].
Order from BISI £5 BISITS-1376

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 16 Apr, p. 457-463.

Contents of this paper include reasons for the installation of the first blast furnace gas turbine plant at the Niederrheinische Hutte: power and blast furnace gas balances, blast and electricity production, and condition of the existing blowers and electricity generating plant. Single working of the gas turbine plant during failure of the public power supply. Cost of plant, acceptance and working experience. Fouling caused by dust. Lack of a suitable, cheap alternative fuel so that blast furnace gas peaks could be used. (Author's summary).

Ohtake, T., Ishizaki, T. K., and Eguchi, N.
CAUSES AND PREVENTION OF SURFACE FISSURES OF HOT-WORKED STEEL PRODUCTS. I. INFLUENCE OF HEATING CONDITIONS, SCALING LOSS AND TRAMP ELEMENTS ON THE SURFACE FISSURES. [1959].
Order from BISI £9 10s BISITS-1316

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1957 [v. 21] Sep, p. 536-540.

Philibert, J. and Crussard, C.
THE USES OF THE ELECTRONIC-PROBE MICRO-ANALYSER IN FERRO-METALLURGICAL RESEARCH. [1959].
Order from BISI £4 BISITS-1353

Trans. of Rev[ue de] Mét[allurgie] (France) 1956 [v. 53] June, p. 461-470.

The Castaing-ONERA electronic-probe analyser has recently been put into operation at the IRSID. The apparatus permits the elementary point analysis (diameter of the zone analysed: 1 or 2.) of all the elements with an atomic number above 17, with an accuracy of 1%. The results of the first experiments undertaken at the IRSID are published with a view to exploring the possibilities of the apparatus in the realm of ferrous metallurgy, in the study of the ores (ooliths), the calamines and the segregation bands in the steels, including actual metallographical investigations (phase transformations, analysis and identification of phases, research into the phenomena of diffusion). (Author's summary)

Plusquellec, J., Azou, P., and Bastion, P.
THE INFLUENCE OF CHARGING TIMES AND STORAGE AT ROOM TEMPERATURE ON THE HYDROGEN EMBRITTLEMENT OF STEELS. [1959].
Order from BISI £1 15s BISITS-1427

Trans. of Comp[tes] Rend[us] [sic] (France) 1958, 23 June, p. 3454-3457.

The note describes a study of the effect of charging times and storage at room temperature on the embrittlement of mild steels by hydrogen, charged electrolytically. In addition, the charging conditions are given in detail. (BISITS abstract)

Sokolov, G. A. and Oyks, G. N.
KINETICS OF LADLE DEGASSING IN THE VACUUM TREATMENT OF MOLTEN STEEL. [1959] 5500 words.
Order from HB $13.85 HB-4675

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedeniy]. Chern[aya] Met[allurgiya] (USSR) 1959, no. 1, p. 47-58.

Study of 13-ton electric furnace steel heats for the processes involved in their vacuum degassing in a ladle. Steel compositions: (a) 1.00-1.10% C, 0.90-1.20 Cr; (b) 0.95-1.10% C, 1.30-1.50 Cr; (c) 0.28-0.35% C, 1-1.1 Mn, 0.9-1.2 Si, 0.9-1.2 Cr, 1.4-1.8 Ni. Development of an indicator (gas) method for study of liberation of gases during the vacuum treatment of steel, by which the rate of degassing can be estimated quantitatively. Particulars on device. Changes in hydrogen and nitrogen contents during vacuum treatment; total volume of gas extracted. Duration of maximum gas liberation and factors facilitating it. Effect of charging ferrosilicon into ladle on gas liberation. Secondary reactions. Ladle convection currents and their effects. (HB abstract)

Stauffer, W. and Keller, A.
AUSTENITIC STEEL CASTINGS FOR THE CONSTRUCTION OF GAS- AND STEAM-TURBINES. [1959].
Order from BISI £6 10s BISITS-1286

Trans. of Giesserei (West Germany) 1956 [v. 43] 24 Apr, p. 229-239.

Trommer, W.
INTERACTION BETWEEN STEEL AND MOULDING MATERIAL. [1959].
Order from BISI £6 5s BISITS-1370

Trans. of Giesserei (West Germany) 1955, v. 42, 18 Aug, p. 433-440.

Light Metals

Loehberg, K., Schulz, E., and Jung-Koenig, W.
THE BEHAVIOUR OF SOME LIGHT METAL PISTON ALLOYS UNDER CYCLIC THERMAL STRESS. [1959] [26]p. 11 refs.
Order from SLA mi$2.70, ph$4.80 59-17408

Trans. of Aluminium (Germany) 1958, v. 34, no. 11, p. 634-642.

The behaviour of piston alloys under cyclic thermal stress, was studied metallographically and by means of fatigue strength determinations. The destruction of the brittle phase, associated with cyclic thermal stressing, remains confined to that phase, and within the period investigated, had no deleterious effect upon the fatigue strength. The aluminum matrix becomes plastically deformed primarily in the areas surrounding the hard and brittle phases. Precipitated particles appear in these areas predominantly. The number and size of precipitated particles determines the changes in the fatigue strength, which, however, can be fully restored by an appropriate heat treatment.

Losana, Luigi.
THE ALLOYS OF BERYLLIUM. PT. III. THE Be-Al SYSTEM (Studio sulle Leghe del Berillio. Nota 3. Il Sistema Berillio-Alluminio). [1959] [13]p. 11 refs. (foreign text included).
Order from SLA mi$2.40, ph$3.30 59-15140

Trans. of Alluminio (Italy) 1940, v. 28, p. 8-13.

Nonferrous (except light) Metals

Brunhuber, E.
THE OXIDIZING TECHNIQUE OF MELTING COPPER ALLOYS. [1959] 13p.
Order from ATS $18.40 ATS-36L32G

Trans. of Giesserei (West Germany) 1959, v. 46, no. 4, p. 86-92.

Geguzin, Ya. E.
THE ACTIVATION ENERGY OF THE PROCESS OF DIFFUSION CREEP IN DISORDERED SUBSTITUTIONAL SOLID SOLUTIONS OF METALS [Ob Energii Aktivatsii Protsessa Diffuzionnoy Polzuchesti Metallicheskikh Neuporyadochennykh Tverdykh Rastvorov Zameshcheniya]. [1959].
Order from BISI £2 15s BISITS-1398

Trans. of A[kademiya] N[auk]. Doklady, 1958 [v. 120] no. 4, p. 819-822.

The Activation energy can be calculated from the temperature dependence of the self-diffusion coefficients, from the heat of fusion of the components and the quantity μ_0 obtainable from the equilibrium diagram, and also from experimental determination of the effect of temperature on rate of diffusion creep. The calculations are made for some non-ferrous binary systems. (Abstract from J. I. SI.)

Structural Metallurgy and Corrosion

Afanas'yev, A. S. and Zhuk, G. V.
A STUDY OF THE PROTECTIVE ACTION OF MIXTURES OF CORROSION INHIBITORS IN NEUTRAL MEDIA. [1959] 9p.
Order from ATS $7.50 ATS-98L31R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 1, p. 141-150.

Akimov, G. V.
INVESTIGATION OF PROTECTIVE FILMS ON METALS BY THE METHOD OF ELECTRICAL RESISTANCE. [1959] [66]p. 5 refs.
Order from LC or SLA mi$3.90, ph$10.80 59-17788

Partial trans. (Sec. 2, 7-10, and appendix) of Akademiya Nauk SSSR. Institut Fizicheskoy Khimii. Trudy. Issledovaniya po Korrozii Metallov, 1952, v. 3, no. 4, p. 3-60.

The resistance of protective films was measured for the metals Be, Mg, Ca, Al, Nb, Ta, Cr (crystalline aluminothermic and electrolytic), Mo, W, Mn (crystalline and electrolytic), Te, Co, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, In, Tl, Sn, Pb, Sb, and Bi and for low-carbon sheet steel 18-8 of various surface treatments. Measurements were made on freshly cleaned surfaces, on surfaces with a real oxide film, after treatment with 10% solution of $K_2Cr_2O_7$, after exposure to H_2S atmosphere and after various treatments for a series of metals. The surface of all metals, with the exception of Ca and Al, showed metallic conductivity in the freshly cleaned state. Formation of the natural oxide film increased the resistance of almost all metals, especially for Al, Be, Mg, Ni, and less for Cr, Mo, Fe, Ni, 18-8, Zn, Cd, Tl, Sn, Pb. The surface retained metallic conductivity also after exposure to air for a long period of time in the case of Mo, W, Co, Pd, Pt, Ag, Au, Sb, and Bi. Treatment in 10% solution of $K_2Cr_2O_7$ appreciably increased the resistance of protective films for all metals, except Pd, Pt, Ag, and Au. Exposure in H_2S atmosphere abruptly reduced the resistance of protective films of all metals which have a natural protective layer, except Ca and Tl, for which the resistance increased appreciably, and Mg, the behavior of which was not affected by hydrogen sulfide. Films with very low electrical conductivity were the oxide films formed on the surface of Mg, Al, Zn, Cd, In, Tl, Sn, Pb, and also Fe with phosphate film, Pb with sulfate film. Semiconductor type films were formed on the surface of Be, Nb, Ta, Cr, Mo, Fe, Co, Ni, 18-8, Cu, Sb, Bi. Films on the surface of Cu, Fe, 18-8, and Nb exhibited rectifier effects. Certain films on Mg and on Al showed the "effect of polarity" (i.e., the breakdown voltage changed as a function of the direction of current). The rate of formation of oxide films in air was not high for the majority of metals. Maximum rate of formation is observed for Al. The resistance and breakdown voltage of films on metals depend on the position of the metal in Mendeleev's periodic system. Metals in one sub-group behave analogously in relation to the electrical properties of films.

Arbellot, L.
BEHAVIOR OF NICKEL AND ITS ALLOYS IN THE PRESENCE OF HALOGENS. [1959].
Order from ATS ATS-38L32F

Trans. of Corrosion et Anticorrosion (France) 1957, v. 5, p. 112-118.

Gindin, L. G. and Pavlova, M. V.
THE CORROSION OF IRON BY BENZENE SOLUTIONS OF IODINE, tr. by J. B. Sykes. Aug 55 [10]p. (2 figs. omitted) 3 refs. A. E. R. E. Lib/Trans. 555.
Order from SLA mi$1.80, ph$1.80 59-17475

Trans. of *Zhurnal Prikladnoy Khimii (USSR) [1951] v. 24, no. 11, p. 1151-1155.

It has been established that the primary product of the corrosion of iron in benzene solutions of iodine is FeI_2, which is converted into Fe_2O_3 under the action of oxygen. The conversion of FeI_2 into Fe_2O_3 stimulates the corrosion, and the accompanying liberation of iodine makes the solution a continuously regenerated attacking agent. (Author's conclusions)

Naumann, F. K. and Carius, W.
CRACK FORMATION IN STEELS UNDER THE INFLUENCE OF AQUEOUS HYDROGEN SULPHIDE SOLUTIONS. [1959].
Order from BISI £4 15s BISITS-1373

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1959 [v. 30] Apr, p. 233-238.

Influence of structure, hardness and tensile stress upon the time to fracture of plain carbon steels and passivated chromium and chromium-nickel steels in aqueous hydrogen sulphide solutions. Appearance of fracture and surface. (Author's summary) (See also 59-18982)

Naumann, F. K. and Carius, W.
THE SIGNIFICANCE OF THE CORROSION PROCESSES IN AQUEOUS HYDROGEN SULPHIDE SOLUTIONS FOR THE FORMATION OF CRACKS IN STEELS. [1959].
Order from BISI £6 5s BISITS-1390

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1959 [v. 30] May, p. 283-292.

The electro-chemical component reactions present during the corrosion of iron and steels in aqueous hydrogen sulphide solutions were examined under conditions of equilibrium and electrical flow by means of potentiometer readings. It was found that the reaction is of a cathodic nature, in which the atomic hydrogen is not separated by the reduction of ions, but presumably directly by the reduction of hydrogen sulphide molecules in solution. Owing to the absence of inhibiting phenomena this process permits a high rate of corrosion and causes fracture in stressed test pieces. As the time to fracture of stressed steel is shortened in a hydrogen sulphide solution in accordance with definite laws with increasing cathodic excess voltages, the interpretation of the cracking process as stress crack corrosion is ruled out. (Author's summary) (See also 59-18981)

Schmid, Erich and Lintner, Karl.
THE EFFECT OF AN ELECTRON BOMBARDMENT ON THE PLASTICITY OF METAL CRYSTALS, tr. by R. S. Forsyth. 1956 [14]p. 22 refs. A. E. R. E. Lib/Trans. 631.
Order from SLA mi$2.40, ph$3.30 59-17546

Trans. of Zeitschrift für Metallkunde (West Germany) 1955, v. 46, no. 2, p. 71-76.

The theory which F. Seitz has developed for the consideration of collision processes and its leading features have been shown. It gives an estimation of that fraction of the energy which is used for ionisation, as well as the fraction for nuclear collisions, which lead to the production of Frenkel defects and to the formation of elastic vibrations. According to this method of treatment, in the vicinity of the track of the incident particle, thermal spikes should be found, in which Frenkel defects are embedded in an elastically stressed region. J. A. Brinkman suggests, mainly for the heavy metals, the existence of displacement spikes also, since in large regions of the crystal, transient melting and crystallisation must occur. These displacement spikes are marked, by an orientation, which is the same as that of the surrounding mother crystal, by an almost complete freedom from Frenkel defects and occasional intercalation of small micro-crystals and alloys. The observations made up to the present on the effect of irradiation on the malleability of metal single- and poly-crystals, show a strengthening effect of the irradiation. It is shown by a lowering of the velocity of flow under constant stress, and by an increase of the critical shearing strength. With technical poly-crystals which were initially annealed, there are produced an increase of hardness, yield point and tensile strength, and a decrease of the extension. When initially cold-worked materials were used, the alterations produced by the irradiation are, in general, considerably less. Flow experiments with cadmium crystals gave an exception to the conditions just mentioned. In this case, an α particle bombardment produced a weakening. New flow experiments with β irradiated zinc crystals (P^{32}, about 75 mC, $E_\beta = 1.71$ MeV) have shown that slightly strong crystals are weakened by bombardment with electrons. In a series of examples the rise of the flow velocity produced by the irradiation is shown. It is assumed that, when weakening takes place, the thermally conditioned recovery counterbalances the strengthening effect of the Frenkel defects which are only formed in small numbers. (From author's summary)

Vaders, E.
AGE-HARDENABLE ALUMINUM-IRON-NICKEL-COPPER ALLOYS (Aushärtbare Aluminum-Eisen-Nickel-Kupfer-legierungen). [1959] [3]p. 4 refs.
Order from SLA mi$1.80, ph$1.80 59-17966

Trans. of Zeitschrift für Metallkunde (Germany) 1933, v. 25 [no. 11] p. 291.

Weisz, M.
CONTRIBUTION TO THE PHYSICAL INVESTIGATION OF FATIGUE DAMAGE. [1959]
Order from BISI £8 15s BISITS-1264

Trans. of Rev[ue de] Mét[allurgie] (France) 1959, v. 56, no. 1, p. 83-103.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

Baranov, P. S. and Gol'danskiy, V. I.
A HIGH-THRESHOLD SCINTILLATION DETECTOR OF NEUTRONS, tr. by J. B. Sykes. 1955 [7]p. 7 refs.
A. E. R. E. Lib/Trans. 587.
Order from SLA mi$1.80, ph$1.80 59-17488

Trans. of *Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1955, v. 28, no. 5, p. 621-623.

A simple and effective detector of high-energy neutrons is described which is based on the reaction $C^{12}(n, 2n)C^{11}$ with threshold 20.2 Mev, as a result of which the positron-active isotope C^{11} is formed, with decay half-life 20.5 min and maximum energy of the β spectrum at about 1 Mev. The detector is sensitive to a background of γ quanta only in a relatively narrow range of dipole "resonance" (near 22 Mev) of the photonuclear reaction $C^{12}(\gamma, n)C^{11}$, whose total cross-section over the whole resonance region (of width about 10 Mev) is about 0.05 Mev barn.

Baumann, M. and Misek, T.
REACTORS FOR THE SYNTHESIS OF AMMONIA. [1959] 10p.
Order from ATS $12.85 ATS-18L32C

Trans. of Chem[icky] Prumysl (Czechoslovakia) 1958, v. 8/33, no. 5, p. 229-233.

Belovitskiy, G. Ye., Romanova, T. A., and others.
FISSION OF URANIUM NUCLEI INDUCED BY SLOW π^- MESONS AND HIGH-ENERGY PARTICLES, tr. by J. B. Sykes. 1955 [7]p. 14 refs.
A. E. R. E. Lib/Trans. 612.
Order from SLA mi$1.80, ph$1.80 59-17529

Trans. of *Zhurnal Eksperimental'noy Teoreticheskoy Fiziki (USSR) 1955, v. 28, no. 6, p. 729-732.

An investigation was made of the fission of uranium nuclei by slow π^- mesons, by 14-, 180-, and 460 Mev fast neutrons, and by γ rays with energies up to 250 Mev. The number of fissions, accompanied by emissions of long-range particles, increased rapidly with the energy of the primary neutrons. The γ-ray irradiations indicated that fissions with the emission of fast charged particles are caused by high-energy photons, which refutes the hypothesis that the effective cross section for uranium nuclei fission at γ-ray energies above 100 Mev is almost zero.

du Bois, B. Bailly
THE INFLUENCE OF CELL CONFIGURATION ON THE LAPLACIAN AND FINE STRUCTURE OF THERMAL FLUX IN A HETEROGENEOUS REACTOR (Influence de la Forme des Cellules sur le Laplacien et Structure Fine du Flux Thermique dans une Pile Heterogene) tr. by Liz Appleby. [1958] 36p. 6 refs.
Order from LC or SLA mi$3.00, ph$6.30 AEC-tr-3559

Trans. of [Commissariat a l'Energie Atomique Rapport] (France) 1957, no. 740.

Calculations are made of (1) the spatial diffusion of thermal neutrons and slowing down neutrons, and (2) corrections in the thermal-utilization and escape factors. Consideration is restricted to plane lattices of infinite dimensions.

Gollnow, H.
A SECOND ISOTOPE OF LUTETIUM AND THE MAGNETIC MOMENT AND QUADRUPOLE MOMENT OF THE NUCLEUS OF Lu^{175}_{71}, tr. by F. Hudswell. 1955 [15]p. 21 refs. A. E. R. E. Lib/Trans. 570.
Order from SLA mi$2. 40, ph$3. 30 59-17506

Trans. of Zeitschrift fllr Physik (Germany) 1936, v. 103 [no. 7/8] p. 443-453.

Grinberg, A. A.
ON THE SIGNIFICANCE OF COMPLEX COMPOUNDS IN RADIOCHEMISTRY (O Znachenii Kompleksnykh Soyedineniy dlya Radiokhimii). [1959] [17]p. 47 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-16383

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1958, v. 3 [no. 1] p. 195-203.

Discussions are presented on (1) the state of radioelements in solution, (2) the importance of complex formation in coprecipitation processes, (3) the role of complex formation in developing methods for separating radioelements by chromatography, and (4) the role of complex formation in extraction processes.

Perfilov, N. A. and Ivanova, N. S.
FISSION OF HEAVY NUCLEI BY SLOW π^- MESONS, tr. by J. B. Sykes. 1955 [7]p. 9 refs. A. E. R. E. Lib/Trans. 613.
Order from SLA mi$1. 80, ph$1. 80 59-17530

Trans. of *Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1955, v. 28, no. 6, p. 732-734.

Thick emulsion photographic plates, containing uranium, lead or tungsten nuclei (by immersing the plates in the appropriate solutions) were irradiated with slow π^- mesons. After development, the plates were examined under a microscope. Disintegrations of nuclei by mesons, with formation of stars, and cases of fission, were observed. Among the cases of fission were included those events where tracks of multiply charged particles were observed at the end of the meson track, diverging in almost opposite directions, as in slow-neutron-induced fission. Cases of fission were observed when slow π^- mesons were captured by nuclei of either uranium, lead or tungsten. As was ascertained later, the probability of tungsten fission by slow π^- mesons is very small. The main investigations were made on the interaction of slow π^- mesons with uranium nuclei. 356 Cases of fission were observed, and from an examination of these it was possible to draw certain conclusions concerning the mechanism of the interaction of slow π^- mesons with these nuclei. (Extracted from the report)

Ivanenko, D. D. and Pustovalov, G. E.
MESONIC ATOMS. [1959] 20p. (8 figs. 2 tables omitted) 65 refs. NP-tr-78.
Order from LC or SLA mi$2. 40, ph$3. 30 59-14761

Trans. of Uspekhi Fiz[icheskikh] Nauk (USSR) 1957, v. 61, no. 1, p. 27-43.

The effects are described of nuclear and μ-meson properties on the energy value in $2P \rightarrow 1S$ transitions of μ-mesonic atoms in Ta and Pb. The vacuum polarization in mesonic atoms and π-meson interactions with nucleons are analyzed.

Moliere, Gert.
THEORY OF THE SCATTERING OF FAST CHARGED PARTICLES. I. SINGLE SCATTERING BY THE SHIELDED COULOMB FIELD, tr. by F. Hudswell. 1955 [25]p. 16 refs. A.E.R.E. Lib/Trans. 594.
Order from SLA mi$2.70, ph$4.80 59-17447

Trans. of Zeitschrift fllr Naturforschung (West Germany) 1947, v. 2a, no. 3, p. 133-145.

The quantum mechanical theory of the elastic single scattering by a shielded Coulomb field is developed in an analytical form by taking into account the shielding in accord with the Thomas-Fermie method. The theory is valid for any values of the parameter $\alpha \equiv zZ/(137\beta)$, [where Z represents the atomic number of the scattering atom, $\pm ze$ is the charge of the scattered particles, v their velocity, and $\beta = v/c$] and for scattering angles $\chi \lesssim 90^0$ and for particles of kinetic energies $E_{kin} \gtrsim zZ^{4/3} \cdot 100$ ev. The influence of the spin, which is small at low scattering angles, was neglected, so that the theory holds for any kind of charged particles. (Author) (See also 59-17542)

Moliere, Gert.
THEORY OF THE SCATTERING OF RAPID CHARGED PARTICLES. II. REPEATED AND MULTIPLE SCATTERING, tr. by F. Hudswell. 1955 [36]p. 17 refs. A. E. R. E. Lib/Trans. 626.
Order from SLA mi$3. 00, ph$6. 30 59-17542

Trans. of Zeitschrift fllr Naturforschung (West Germany) 1948, v. 3a, no. 2, p. 78-97.

See also 59-17447

Pontekorvo, B. M.
PROCESSES OF FORMATION OF HEAVY MESONS AND V_1^0-PARTICLES, tr. by V. Beak. 1956 [13]p. 11 refs. A. E. R. E. Lib/Trans. 644.
Order from SLA mi$2. 40, ph$3. 30 59-17554

Trans. of *Zhur[nal] Eksp[erimental'noy i] Teor-[eticheskoy] Fiz[iki] (USSR) 1955, v. 29, no. 2(8), p. 140-146.

The processes of formation of V_1^0-particles and heavy mesons are discussed from the phenomenological point

of view. The mechanism of the simultaneous origin of V-particles and heavy mesons is considered. The possibility is discussed of the existence of relatively stable systems consisting of nucleons and V-particles. A detailed examination is made of the difficulties connected with the explanation of the existence of particles originating with high probability but having a prolonged lifetime. The conclusions drawn in this work may help in the formulation of working hypotheses during the interpretation of experimental data and in discussion of the possibility of devising experiments on the formation of new particles. (Author's abstract)

Smorodinskiy, Ya. A.
POLARISATION IN THE SCATTERING OF PROTONS BY PROTONS. [1959] [4]p. 2 refs. AERE Lib/Trans. 548.
Order from SLA mi$1.80, ph$1.80 59-17361

Trans. of Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1954, v. 27, no. 1, p. 123-124.

Trlifaj, Ladislav.
THE SLOWING DOWN AND DIFFUSION OF NEUTRONS IN FINITE MEDIA ACCORDING TO ELEMENTARY DIFFUSION THEORY, tr. by J. B. Sykes. Aug 55 [19]p. 6 refs. A. E. R. E. Lib/Trans. 575.
Order from SLA mi$2.40, ph$3.30 59-17509

Trans. of [Chekhoslovatskiy Fizicheskiy Zhurnal] (Czechoslovakia) 1955, v. 5, no. 2, p. 121-132.

The diffusion problem is first solved for a finite medium with a source of (fast) neutrons in a general form, of which particular instances coincide with the results of P. R. Wallace (Nucleonics 4: 30, 1949). The same method is applied to solve the problem of neutron diffusion in a spherically symmetric finite system of two media, with a point source of fast neutrons at the centre of symmetry. The conditions are also examined under which a source placed in the first medium behaves almost as a source of thermal neutrons, so far as the second medium is concerned.

Instruments and Installations

Tarasenko, N. Yu. and Prostakova, I. G.
HEALTH PROBLEMS CONNECTED WITH WORK IN ATOMIC POWER PLANTS. 21 July 59, 7p. 6 refs. JPRS: 1757-N.
Order from OTS $0.50 59-13705

Trans. of Gig[iyena] Truda i Professional'nyye Zabolevaniya (USSR) 1957 [v. 1] no. 1, p. 10-14.

Nuclear Engineering and Power

SOVIET 2,000-kw MOBILE NUCLEAR POWER PLANT. 21 Apr 59 [3]p. 6 refs. AF 1255710.
Order from LC or SLA mi$1.80, ph$1.80 59-16476

Trans. from Soviet open sources, 1957-1958.

Soviet research in connection with a proposed small capacity mobile nuclear power plant is reported. A 2000 kw water-moderated, water-cooled reactor was to have been completed and tested by the end of 1958 in Obinsk. The reactor vessel of the experimental reactor is about 1 m in diameter and 2.2 m high. Water at 120 atm pressure is used both as moderator and coolant. Reference is made to research involving ceramic fuel elements with nitrogen or helium as coolant.

Sushkov, Yu. N.
ATOMIC ENERGY IN AVIATION, tr. by M. A. H. [1958] 32p. (7 figs. omitted) 8 refs. H-3399.
Order from OTS $1.00 59-11976

Trans. of mono. Atommaya Energiya v Aviatsii, Moscow, 1958, p. 1-32.
Other translations are available from OTS $0.75 as 59-11921 [1959] [27]p. and from LC or SLA mi$2.70, ph$4.80 as AEC-tr-3558 [1959] 26p.

For abstract see 59-16110 above.

PHYSICS

AKADEMIYA NAUK ARMYANSKOY SSR, YEREVAN. IZVESTIYA, SERIYA FIZIKO-MATEMATICHESKIKH NAUK, 1958, VOL. 11, NO. 4, P. 3-144 (News of the Academy of Sciences of the Armenian SSR. Physico-mathematical Sciences Series). [1959] [10]p. SOV-22-11-4-(1-11)/11.
Order from OTS $0.50, $3.00/6 mo. PB 141 017T-3
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA FIZICHESKAYA, 1959, V. 23, NO. 3, P. 266-424 (News of the Academy of Sciences of the USSR, Physics Series). [1959] 1v. SOV-48-23-3-(1-34)/34.
Order from OTS $0.80, $4.50/6 mo. PB 141 041T-15
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENY. FIZIKA (USSR) 1959, NO. 1, P. 3-175 (News of Institutes of Higher Learning, Physics). [1959] 1v. SOV-139-59-1-(1-34)/34.
Order from OTS $0.90, $5.25/year PB 141 043T-4
Foreign $1.15, $6.75/year

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. FIZIKA (USSR) 1959, NO. 5, Abstracts 9792-11997 (Soviet Abstracts. Physics). 10 Aug 59, 82p. JPRS: 1845-N.
Order from OTS $1.00 59-13792

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Section B. Theoretical Physics
Section C. Nuclear Physics
Section D. Atomic and Molecular Physics
Section E. Solid State Physics
Section F. Magnetism
Section G. Electricity
Section H. Electronics
Section I. Radio Physics
Section J. Acoustics
Section K. Optics

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia, excluding the Soviet Union.

Rapoport, G. N.
CERTAIN RESULTS OF THE GENERAL THEORY OF WAVEGUIDES WHICH CONTAIN IRISES. [1959] [4]p. 6 refs. AF-30.
Order from LC or SLA mi$1.80, ph$1.80 59-16690

Trans. of Radiotekhnika (USSR) 1954 [v. 9] p. 78-80.

Electricity and Magnetism

Schwabe, Eberhard
MODERN PERMANENT MAGNETIC COUPLING WITH BARIUM FERRITE MAGNETS. [1959] [31]p. (8 figs. omitted) 9 refs.
Order from SLA mi$3.00, ph$6.30 59-17761

Trans. of Feinwerktechnik (West Germany) 1958, v. 62 [no. 1] p. 1-8.

Calculation fundamentals for the determination of breaking forces and moments of reversibly operating couplings with barium ferrite magnets of simple construction are derived from energy analyses. These couplings permit the transmission of considerably greater forces and moments than couplings with Alnico-magnets, which are utilized at the present only in special cases.

Sixtus, K.
MAGNETIC TEXTURED MATERIALS. [1959] 12p. 4 refs.
Order from SLA mi$2.40, ph$3.30 59-17493

Trans. of Feinwerktechnik (West Germany) 1950, v. 54, no. 4, p. 88-91.

The properties of magnetic materials for contact detectors and magnetic amplifiers as well as the structure of cores made from these substances are discussed.

Zernov, N. V.
THE SOLUTION OF NONSTATIONARY BOUNDARY PROBLEMS IN ELECTRODYNAMICS. [1959] [4]p. AF-37.
Order from LC or SLA mi$1.80, ph$1.80 59-16686

Trans. of [Akademiya Nauk SSSR. Doklady] 1951, v. 80, no. 1, p. 33-35.

Molecular Physics and Spectroscopy

*OPTIKA I SPEKTROSKOPIYA (USSR) 1959, V. 6, NO. 5, P. 573-716 (Optics and Spectroscopy). [1959] 1v. SOV-51-6-5-(1-34)/34.
Order from OTS $0.70, $4.00/6 mo. PB 141 047T-17
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Batarchukova, N. R.
COMPARATIVE INVESTIGATIONS OF THE METROLOGICAL QUALITIES OF THE SPECTRAL LINES OF ^{206}Pb AND ^{114}Cd (Sravnitel'nyye Issledovaniya Metrologicheskikh Kachestv Spektral'nykh Liniy Pb^{206} i Cd^{114}). June 59 [5]p. 4 refs. RTS no. 1001.
Order from LC or SLA mi$1.80, ph$1.80 59-18008

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 4, no. 1, p. 112-113.

The object of this investigation was to explore the visible spectral region of ^{206}Pb with a view to choosing the new fundamental spectral line from among its radiations. The light source was in the form of an electrodeless fused quartz discharge tube, filled with 3 or 4 mg of ^{206}Pb, and pure argon at a pressure of 1 to 2 mm Hg. A 180 to 200 mc generator was used for the excitation of the lead spectrum. In the electrodeless discharge a considerable number of sufficiently bright lines could be observed in the visible region when the temperatures of the source was 480 to 500°C. The radiation was investigated by visual observation of the interference pattern in the ^{206}Pb lines with different interferometer path differences. Attention was chiefly paid to the green line of ^{206}Pb, $\lambda = 5005$ A, whose wavelength was compared with that of the red line of ^{114}Cd. Two Fabry-Perot etalons (fused quartz tubular etalon with mirror spacing of 100 mm, and a conventional etalon with spacer ring thickness 16.5 mm) were used as high resolution devices. The interference spectrograms were obtained for two path differences, 33 and 200 mm. The interference ring diameters were measured on a photoelectric comparator. Using the method of the coincidences of the interference orders, the wavelength of the green line of ^{206}Pb was found to be $\lambda = 5005.4301$ A, with an improved accuracy of 2×10^{-4} A. The investigation indicates that in conditions of an electrodeless discharge, when heating the source to 450-500°C, the line width and wavelength reproducibility of the spectral lines of ^{206}Pb are slightly inferior to those of the red line of ^{114}Cd, and the lines of ^{84}Kr and ^{198}Hg.

Ebert, F. and Wagner, A.
AN EXPLANATION OF INTERFERENCE ERRORS OCCURRING SYSTEMATICALLY IN X-RAY-FLUORESCENCE-SPECTROSCOPIC MEASUREMENTS AND MEANS WHEREBY THESE INTERFERENCE ERRORS MAY BE ELIMINATED. [1959].
Order from BISI £ 2 15s BISITS-1177

Trans. of Z[eitschrift fur] Metallk[unde] (West Germany) 1957 [v. 48] Dec, p. 646-649.

Interference errors - errors caused by lattice plane interference from the specimen - special absorption conditions in the specimen and in the counter tube - geometric relations of complete apparatus - avoidance of errors. (Author's summary)

Striganov, A. R., Korostyleva, L. A., and Dontsov, Yu. B.
ISOTOPE SHIFTS IN THE PLUTONIUM SPECTRUM, tr. by J. B. Sykes. 1955 [8]p. 8 refs. A. E. R. E. Lib/Trans. 645.
Order from SLA mi$1.80, ph$1.80 59-17555

Trans. of *Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1955, v. 28, no. 4, p. 480-484.

An isotope shift has been discovered in 19 plutonium lines in the range 4100 to 6500 A. It has been found that, of these, 13 lines have a purely isotopic structure and 6 an isotopic and hyperfine structure. All the lines except 6192.63 A undergo a negative shift. The magnitude of the isotope shift in the lines investigated lies between 0.08 and 0.29 cm^{-1}. From data on the isotope shift and hyperfine splitting of the lines, transition schemes have been set up for lines having a hyperfine structure only, an isotopic structure only, or, both together. Moreover, the electron configurations have been more or less reliably predicted for certain levels of these transitions. (Author's abstract)

Optics

OPHTHALMOLOGIC CONTACT GLASS. 8 Aug 58 [3]p. (1 fig. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-17117

Trans. of French patent 1,076,558, gr. 12, cl. 2, appl. 29 Apr 53, granted 21 Apr 54, pub. 27 Oct 54, by Müller-Welt G. m. b. H., Germany.

An ophthalmologic contact lens is described which is characterized by the fact that its concavity is generated by two radii, the centers of which are displaced with respect to one another along the axis of symmetry of the contact lens.

Gerasimov, F. M., Tel'tevskiy, I. A. and others.
DIFFRACTION GRATINGS FROM THE STATE OPTICAL INSTITUTE (Difraktsionnyye Reshetki Gosudarstvennogo Opticheskogo Instituta). May 59 [16]p. 18 refs. RTS no. 1005.
Order from LC or SLA mi$2.40, ph$3.30 59-18469

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 4, no. 6, p. 779-790.

The engraving engine at the State Optical Institute used for ruling gratings up to 150 mm wide is briefly described. The optical aspects of the gratings and the sources of certain types of error are considered. The best gratings show a resolving power of 600,000; the Rowland ghosts are of 0.1% relative intensity in the 1st order of a 600 lines/mm grating (only 0.01% in the best specimens). The gratings show a marked blaze. A characteristic variation in the polarization is found near the maximum of the blaze.

Grewen, J., Segmuller, A., and Wasserman, G.
COUNTER-TUBE TECHNIQUE WITH A NEWLY-DEVELOPED SPECIMEN HOLDER FOR THE REPRESENTATION OF TEXTURES IN QUANTITATIVE POLE-FIGURES. [1959].
Order from BISI £3 5s BISITS-1196

Trans. of Arch[iv fur das] Eisenhüt[tenwesen] (West Germany) 1958 [v. 29] Feb, p. 115-118.

Description of a specimen holder for taking pole figures with the counter-tube goniometer, in the transmitted beam and back reflection positions. Determination of quantitative pole figures without using a comparison specimen of random orientation. Trial of the technique on rolled aluminium foils. (Author's summary)

Solid State Physics

Bösenberg, W.
THE DIFFUSION OF ANTIMONY, ARSENIC AND INDIUM IN SOLID GERMANIUM, tr. by F. Hudswell. 1955 [15]p. 26 refs. A. E. R. E. Lib/Trans. 619.
Order from SLA mi$2.40, ph$3.30 59-17535

Trans. of Zeitschrift für Naturforschung (West Germany) 1955, v. 10a, no. 4, p. 285-291.

Galishev, V. S. and Vonsovskiy, S. V.
ON THE THEORY OF EXCITON EXCITED STATES. 25 Sep 58, 18p. 6 refs. qd-3376.
Order from LC or SLA mi$2.40, ph$3.30 59-10308

Trans. of Fiz[ika] Metallov i Metalloved[eniye] (USSR) 1956, v. 3, no. 3, p. 395-405.

The Bogoliubov theory is generalized to the case of exciton excited states. It is shown that the quantum states of a system of weakly-excited excitions in a crystal lattice can be interpreted as a set of individual elementary excitations (excitons). The relation between the theory developed and the Frenkel' theory is indicated.

Glauberman, A. Ye. and Muzychuk, A. M.
SURFACE TENSION OF BINARY METALLIC ALLOYS OF BODY-CENTRED AND FACE-CENTRED STRUCTURE. 1956 [13]p. (1 equation omitted) 4 refs. A. E. R. E. Lib/Trans. 638.
Order from SLA mi$2. 40, ph$3. 30 59-17551

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1954, v. 28, no. 9, p. 1615-1622.

The theory of the surface tension of binary alloys based on the idea of the quasihetero-polarity of the alloy lattice is used to calculate the surface tension of binary intermetallic alloys of body-centred and face-centred structure. In the formulae obtained, the surface tension of the corresponding alloys is expressed in terms of the "effective charges" characterizing the alloy components. (Author's conclusions) (See also 59-10239)

Grillot; Edmond.
CONCERNING THE NATURE OF CdS FLUORESCENCE AT VERY LOW TEMPERATURES. [1959] [7]p. 10 refs.
Order from SLA mi$1.80, ph$1.80 59-17806

Trans. from Semi-Conductors and Phosphors, Proc. Internat. Colloquim, 1956.

Direct radioactive transitions between the conduction and valence band are actually always very improbable, even in pure CdS. The green fluorescence of the latter at low temperature is attributable to two types of lattice faults (probably Cd and S vacancies), coupled with lattice vibrations. For the case in which these faults are present in very low concentration, no fluorescence is observed at 77°K, but at 20°K and lower, recombination radiation occurs originating from the exciton levels.

Krebs, Heinz.
THE INFLUENCE OF HOMOPOLAR BOND COMPONENTS. CARBIDES, NITRIDES AND OXIDES WITH RESONANCE BONDS. [1959] [7]p.
Order from SLA mi$1. 80, ph$1. 80 59-17764

Partial trans. (p. 104-106) of Acta Crystallographica (Denmark) 1956, v. 9, p. 95-108.

Lyubarskiy, G. Ya. and Kovalev, O. V.
PHASE TRANSITIONS OF THE SECOND KIND IN CRYSTALS WITH T_h^6 SYMMETRY. [1959] 3p. 2 refs.
Order from LC or SLA mi$1. 80, ph$1. 80 59-17474

Trans. of *Kristallografiya [Moscow] (USSR) 1959, v. 4, no. 1, p. 121.

Manenkov, A. A. and Prokhorov, A. M.
FINE STRUCTURE OF THE PARAMAGNETIC RESONANCE SPECTRUM OF THE Cr+++ION IN CHROMIUM CORUNDUM, tr. by J. B. Sykes. Nov 55 [5]p. 2 refs. A. E. R. E. Lib/Trans. 625.
Order from SLA mi$1. 80, ph$1. 80 59-17541

Trans. of *Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1955, v. 28, no. 6, p. 762.

Paramagnetic resonance was investigated at room temperature in the solid solution Al_2O_3 - Cr_2O_3 (chromium corundum), with a chromium concentration of 0. 05%. At the frequency 8960 MH_z, two observed lines are due to magnetic dipole transitions M= 3/2↔ 1/2, and one to the transition M= 1/2↔ -1/2. At the frequency ν = 11, 970 MH_z, the observed lines of the fine structure are due to the transitions M= 3/2↔ 1/2, M= 1/2↔ -1/2, and M= -3/2↔ -1/2. When the axis of symmetry is perpendicular to the direction of the external magnetic field, two lines are observed at the frequency 8960 MH_z and four at the frequency 11, 970 MH_z; in accordance with the theory, the relative intensities of the lines depend on the angle between the axis of symmetry of the crystal and the direction of the radio-frequency field. (Extracted from the report)

Osipov, K. A.
FUSION AND SELF-DIFFUSION IN SOLID METALS [tr. by S. J. Rothman]. [1959] [11]p. 24 refs.
Order from LC or SLA mi$2. 40, ph$3. 30 AEC-tr-3158 (Rev.)

Trans. of Akad[emiya] Nauk [S]SSR. Ot[deleniye] Tekh[nicheskikh] Nauk. Izv[estiya] 1957, no. 7, p. 35-[40].
Another translation is available in French from LC or SLA mi$2. 40, ph$3. 30 as CEA-tr-R552; 59-16221, 19 Nov 58, 18p.

Passerini, L.
ISOMORPHISM BETWEEN OXIDES OF TETRAVALENT METALS IN THE SYSTEM: CeO_2-ThO_2; CeO_2-ZrO_2; CeO_2-HfO_2. [1959] 9p. (9 tables omitted) 19 refs.
Order from SLA mi$1. 80, ph$1. 80 AEC-tr-3743

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1930, v. 60, p. 762-767.

Rodye, V. E.
THE KINETICS OF SUPERSTRUCTURAL TRANSFORMATIONS OF THE Fe_3Al ALLOY. [1959] [8]p. (8 figs. omitted) 4 refs.
Order from LC mi$1. 80, ph$1. 80 59-17370

Trans. of *Akad[emiya] Nauk SSSR. Izvest[iya]. Ser[iya] Fiz[icheskaya] 1957, v. 21, no. 9, p. 1234-1238.

The purpose of this is an investigation was made to determine the changes of the various physical parameters of the alloy Fe_3Al in the process of dispersion and, simultaneously, to determine the degree of dispersion of the alloy according to the intensity of the superstructural lines on X-ray radiographs of the alloy.

Staubwasser, W.
ON HARDENING OF ALUMINUM SINGLE CRYSTALS (99. 99%Al) AND THE INTERPRETATION OF THIS PROCESS. [1959] 18p. 26 refs.
Order from SLA mi$2. 40, ph$3. 30 59-17757

Trans. of Acta Metallurgica (U. S.) 1959, v. 7, p. 43-50.

Vonsovskiy, S. V. and Turov, Ye. A.
ON THE EXCHANGE INTERACTION OF VALENCY AND INNER ELECTRONS IN CRYSTALS; THE (s - d) EXCHANGE MODEL OF THE TRANSITION METALS. 1955 [13]p. 26 refs. A. E. R. E. Lib/Trans. 547.
Order from SLA mi$2. 40, ph$3. 30 59-17360

Trans. of Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1953, v. 24, no. 4, p. 419-428.

On the basis of a multi-electron theory of transition metals, the (s - d) exchange model is constructed; this takes account of the active participation, in the physico-chemical properties of crystals of transition group elements, of former valency and inner electrons from incomplete layers of the envelopes of the isolated atoms of these elements. An expression is obtained for the energy operator of the system in the second quantisation representation. The eigenvalues of this operator, on certain hypotheses, give two branches of the energy spectrum of the system, corresponding to elementary excitations of the Bose type (ferromagnons) and of the Fermi type (conduction electrons). A non-diagonal addition to the energy operator describes the processes of interaction (collisions) between the ferromagnons and the conduction elements.

Yefimov, Ye. A. and Yerusalimchik, I. G.
INVESTIGATION OF ELECTRODE REACTIONS ON A SILICON CATHODE, tr. by Morris D. Friedman. 30 Mar 59, 7p. TE-9.
Order from LC or SLA mi$1. 80, ph$1. 80 59-14684

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 124, no. 3, p. 609-612.

Polarization measurements (59-15004) were used to study the processes of electrolytic liberation of hydrogen and the reduction of potassium ferricyanide by single crystal p- and n- type silicon, oriented along the 111 plane, in a current density range of 10^{-6} to 10^{-1} amp/sq cm at 20°.

Zborovskiy, M. I.
SCIENTIFIC-TECHNICAL CONFERENCE ON SEMICONDUCTORS' APPLICATION (Nauchno-Tekhnicheskaya Konferentsiya po Primeneniyo Poluprovodnikov). [1959] [8]p. F-TS-9403/III; AD-162 886.
Order from LC or SLA mi$1. 80, ph$1. 80 59-16067

Trans. of Vestnik Mashinostroyeniya (USSR) 1957 [v. 37] no. 9, p. 72-74.

Thermodynamics

IN THE HANDS OF THE WELDER, A PIECE OF THE SUN. [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 59-17471

Trans. of Sovetskaya Aviatsiya (USSR) 1959, 26 July, p. 4, col. 3.

A discussion is presented of the operating principle of the plasma burner, a 15,000°C source of heat which can be used for cutting such high-melting materials as carborundum and ceramic plate.

Averin, Ye. K.
THE EFFECT OF THE MATERIAL AND OF THE MECHANICAL TREATMENT OF THE SURFACE ON THE HEAT EXCHANGE IN THE BOILING OF WATER, tr. by J. B. Sykes. 1955 [12]p. 6 refs. A. E. R. E. Lib/Trans. 562.
Order from SLA mi$2. 40, ph$3. 30 59-17495

Trans. of Akademiya Nauk SSSR. Otdeleniye Technicheskikh Nauk. Izvestiya, 1954, no. 3, p. 116-122.

The values of the critical specific thermal load, the critical temperature excess and the critical heat exchange coefficient in the boiling of water on steel, copper, nickel-plated copper and aluminum surfaces are approximately the same. A noticeable effect of the material and roughness of the heat-exchanging surface on the heat exchange coefficient in boiling is observed only for loads up to approximately 100×10^3 kcal/m^{2}h. A destruction of the heat-exchanging surface occurs in boiling, most probably at the points where vapour bubbles are formed. In the boiling of water at a non-wetted surface, the heat exchange coefficient decreases as the thermal load increases. The critical load in this case is 100×10^3 kcal/m^{2}h. (Author's conclusions)

Eickler, W.
NEW INSTRUMENTS FOR THE INVESTIGATION OF GASES AND DETERMINATION OF THEIR CALORIFIC VALUE, AND FOR THE CONTROL OF FURNACE INSTALLATIONS. [1959]
Order from BISI £ 2 15s BISITS-1216

Trans. of Gas Wärme (West Germany) 1957, Nov, p. 348-351.

Grass, G.
HEAT TRANSFER OF ROLLED FINNED TUBES. [1959].
Order from BISI £ 3 BISITS-1381

Trans. of Allgemeine Wärmetechnik (West Germany) 1956, no. 5/6, p. 104-108.

It has been found that rolled tubes with their slight enlargement in surface area and their high fin efficiency generally reach the performance of the conventional type finned tubes with their large surface areas, though lower fin efficiency. Thus the superior strength at elevated temperatures and the smaller danger of fouling of rolled finned tubes are not incurred at the expense of any marked heat transfer or technical disadvantages. (Author's summary)

Heinrich, W. and Peschke, F.
METHODES DE MESURE DE TEMPERATURES À VARIATIONS RAPIDES, tr. by Roulet. 29 July 58, 43p. 54 refs. (text in French) Trans. no. A 440.
Order from SLA mi$3.30, ph$7.80 59-17807

Trans. in French of [die] Techn[ik] (Germany) 1957, v. 12, no. 8, p. 532-540.

The more important methods employing spectral radiation for measurement of the temperature of phenomena with rapid variations are reviewed. In using multipliers as radiation receptors, these methods (for which the existence of thermal equilibrium is a necessary condition) permit registration of temperature variations almost without inertia.

Krestovnikov, A. N. and Vendrikh, M. S.
THERMODYNAMICS OF TITANIUM DIBORIDE. [1959] 1300 words.
Order from HB $3.80 HB-4673

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedeniy]. Tsvet[naya] Metall[urgiya] (USSR) 1959, no. 2, p. 54-57.

Calculation of frequencies of natural vibrations of free and combined titanium and boron atoms. Heat capacities of TiB_2 calculated according to Debye and compared with water-calorimeter values. Explanation of discrepancies. Enthropies of Ti, B, and TiB_2 as function of temperature. Heat of formation of TiB_2 at 298°K. Data on free energy of TiB_2 between 298 and 3253°K. (HB abstract)

Kudryashev, L. L.
THE REFINEMENT OF THE CALCULATION OF THE HEAT EXCHANGE COEFFICIENT BETWEEN A GAS AND SUSPENDED PARTICLES USING THE HEAT FILM METHOD. [1959] [9]p. 14 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-981

Trans. of Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1949, no. 11, p. 1620-1625.

Kulagin, I. D. and Nikolayev, A. V.
HEAT BALANCE OF DIRECT CURRENT WELDING ARC IN GASES DURING THE PERIOD OF DROP FORMATION. [1959] 5p.
Order from ATS $8.00 ATS-75L32R

Trans. of Akad[emiya] Nauk SSSR. Otdel[eniye] Tekh[nicheskikh] Nauk. Izvest[iya] 1958, no. 11, p. 89-91.

Lohmann, F.
ALUMINIUM LENGTHWISE-FINNED HEAT EXCHANGERS. [1959] [35]p. 7 refs.
Order from SLA mi$3.00, ph$6.30 59-17629

Trans. of Aluminium (Germany) 1958, v. 34, no. 7, p. 410-416.
Another translation is available from SLA, mi$2.70, ph$3.80 as 59-10851, 10 Feb 59, 25p.

Discussions are presented on (1) the thermal conductivity of aluminium as compared to those of the other metals, (2) the five heat-resistances during heat transfer through a separating wall, (3) the logarithmic average temperature differential, (4) the determination of heat-transfer coefficient, (5) equivalent hydraulic diameter, (6) the utilization of thermal conductivity of the exchanger material through finning, in relation to heat transmitting conditions of the media involved in the heat-exchange, and (7) temperature gradients in fins: the efficiency of fins and its computation: comparative example of fins made of different metals.

Romanov, A. G.
AN INVESTIGATION OF HEAT EXCHANGE IN CLOSED TUBES UNDER NATURAL CONVECTION CONDITIONS (Issledovaniye Teploobmena v Glukhom Kanal v Usloviyakh Yestestvennoy Konvektsiy). July 57 [11]p. 9 refs. C. T. S. no. 326.
Order from LC or SLA mi$2.40, ph$3.30 59-14176

Trans. of Akademiya Nauk SSSR. Otdeleniye Technicheskikh Nauk. Izvestiya, 1956, no. 6, p. 63-76.

Schuh, Herbert.
FINITE DIFFERENCE METHOD FOR CALCULATING TRANSIENT TEMPERATURE DISTRIBUTIONS DUE TO ONE DIMENSIONAL HEAT FLOW IN SIMPLE AND COMPOSITE BODIES (Differenzenverfahren zum Berechnen von Temperatur-Ausgleichs-Vorgangen bei Eindimensionaler Warmeströmung in Einfachen und Zusammengesetzten Körpern) tr. by K. E. Bucks. July 58 [78]p. 20 refs. Library Trans. 750.
Order from SLA mi$4.50, ph$12.30 59-10063

Trans. of VDI-Forschungsheft (West Germany) 1957, no. 459.

Sterman, L. S.
INVESTIGATION OF HEAT EXCHANGE IN THE BOILING OF A LIQUID IN PIPES, tr. by J. B. Sykes. 1955 [10]p. 8 refs. A. E. R. E. Lib/Trans. 565.
Order from SLA mi$1.80, ph$1.80 59-17501

Trans. of Zhurnal Tekhnicheskoy Fiziki (USSR) 1954, v. 24, no. 11, p. 2046-2053.

Curves are presented showing experimentally determined effects of pressure, steam content, and velocity on the heat-transfer coefficient and other properties of boiling water.

Wave Propagation

Comte, G.
IMPROVING PULSE TECHNIQUES BY INTERCORRELATION. [1959] 11p.
Order from ATS $12.20 ATS-72L30F

Trans. of Câbles et Transmission (France) 1958, v. 12, no. 2, p. 162-169.

Grigoryan, S. S.
ON THE MOTION OF A SLENDER SOLID BODY UNDER THE EFFECT OF A STRONG SHOCKWAVE. [1959] 3p. 1 ref.
Order from MDF $3.00 MDF G-162

Trans. of A[kademiya] N[auk] SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izv[estiya] 1959, no. 1, p. 165-166.

Khristyanovich, S. A.
THE SHOCK WAVE AT A CONSIDERABLE DISTANCE FROM THE LOCATION OF THE EXPLOSION (Udarnaya Volna Znachitel'nom Rasstoyaniy ot Mesta Vzryva). [1959] [13]p. 3 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-17702

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1956, v. 20, no. 5, p. 599-605.

For distances where the pressure at the wave front does not exceed 250 to 300 atmospheres (i. e., when the shock wave acquires a form that does not depend upon subsequent occurrences outside its boundary), consideration is given to (1) solutions of the hydrodynamic equations, which depend only upon the ratio of distance to time, (2) a shperical shock wave propagating in a quiescent fluid, (3) an air shock wave, (4) cylindrical shock waves, and (5) the expansion phase of an air shock wave.

Klinker, L.
EXPERIMENTAL INVESTIGATIONS OF PROPAGATION MECHANISM IN THE RANGE OF METER WAVELENGTHS. [1959] 14p.
Order from ATS $15.85 ATS-03L32G

Trans. of Nachrichtentechnik (Germany) 1957, v. 7, no. 5, p. 210-215.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ABOUT THE AWARDING OF LENIN PREMIUMS FOR THE MOST OUTSTANDING WORKS IN THE FIELD OF SCIENCE AND TECHNOLOGY (O Prisuzhdenii Leninskikh Premiy za Naiboleye Vydayushchiyesya Raboty v Oblasti Nauki i Tekhniki). 13 July 59 [9]p. (22 figs. omitted). AF 1255931.
Order from LC or SLA mi$1.80, ph$1.80 59-18446

Trans. from Izvestiya (USSR) 1959, no. 95, p. 1, cols. 4-7; no. 96, p. 3, cols. 1-7; no. 98, p. 1, cols. 1-7; no. 99, p. 1, cols. 3-7.

DEVICE FOR OBTAINING A LONGER INDICATING RESPONSE PERIOD OF AXLES WHOSE ROTATIONAL MOTION HAS BEEN DAMPED, ESPECIALLY OF AXLES OF INDICATORS OF MEASURING INSTRUMENTS, IN INSTALLATIONS INVOLVING STRONGLY OSCILLATING MOTION. [1959] [3]p. (1 fig. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-17109

Trans. of German patent 158817, cl. 21c, 26 Apr 1904, by Hartmann and Braun A. G., Frankfurt a. M.

*IZMERITEL'NAYA TEKHNIKA (USSR) 1959, NO. 5, P. 1-63 (Measurement Techniques). [1959] 1v. SOV-115-59-5-(1-27)/27.
Order from OTS $0.70, $4.00/year PB 141 112T-10
Foreign $0.95, $5.50/year

Consists of abstracts in English.

SCIENTIFIC INFORMATION REPT. 21 Aug 59, 114p.
Order from OTS $2.75, $28.00/year PB 131 891T-28

Consists of unevaluated information extracted from publications of USSR, Eastern Europe, and China.

VICTORIES OF SOVIET SCIENCE AND TECHNOLOGY (Pobedy Sovetskoy Nauki i Tekhniki). 8 July 59 [5]p. AF 1255922.
Order from LC or SLA mi$1.80, ph$1.80 59-18461

Trans. from Izvestiya (USSR) 1959, no. 95, p. 4, col. 1-7.

The scientific achievements of the 56 recipients of the Lenin Award are described.

BOOK REVIEWS

The following book reviews can be ordered by number from L. C. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and a detailed table of contents. The length of each review is indicated at the end of the entry.

BR-SOV/1420
Mironov, Konstantin Andreyevich, and Lev Iosifovich Shipetin
TEPLOTEKHNICHESKIYE IZMERITEL'NYYE PRIBORY; SPRAVOCHNYYE MATERIALY (Heat Engineering Measuring Apparatus; Reference Material) 2d ed., rev. and enl. Moscow, Mashgiz, 1958. 896 p. 20,000 copies printed.

This book gives the main characteristics, arrangement, and over-all dimensions of apparatus for measuring temperature, pressure, quantity, and flow of liquids, gases and vapors, liquid levels, the composition of liquids, and the composition, density and humidity of gases. 15p., Microfilm $2.40, Photocopy $3.30

BR-SOV/2021 (SOV/1715)
Grigor'yev, P. F.
ISSLEDOVANIYE IZNOSA DETALEY AVIATSIONNOGO DVIGATELYA S POMOSHCH'YU RADIOAKTIVNYKH IZOTOPOV (Investigating Wear of Aircraft-engine Components by Means of Radioactive Isotopes) Moscow, AN SSSR, 1956. 12p.

NOTE: This booklet was inadvertently processed twice and assigned the two numbers appearing above. Users are advised to eliminate SOV/1715 and retain the later treatment, SOV/2021.
These Phase I reviews were distributed on May 26 and July 14 1959, respectively.
1p., Microfilm $1.80, Photocopy $1.80

BR-SOV/1822
Nelidov, Igor' Yevgen'yevich
EKONOMIKA I ORGANIZATSIYA ENERGOMASHINOSTROYENIYA (Economics and Organization of Power Equipment Manufacturing) Moscow, Gosenergoizdat, 1958. 391 p. Errata slip inserted. 4,300 copies printed.

A text for students in technical vuzes. 5p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1858
Moscow. Stankoinstrumental'nyy institut. Kafedra "Oborudovaniye i Tekhnologiya kovki i shtampovki"
ISSLEDOVANIYA V OBLASTI OBORUDOVANIYA I TEKHNOLOGII SHTAMPOVKI (Investigations in the Field of Stamping Equipment and Processing) Moscow, Mashgiz, 1958. 234 p. (Series: Its: Sbornik, Nr 4) Errata slip inserted. 5,500 copies printed.

In this collection of articles the results of theoretical and experimental work are presented. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1888
Moscow. Vyssheye tekhnicheskoye uchilishche
PROKATNYYE STANY I TEKHNOLOGIYA PROKATKI; SBORNIK STATEY (Rolling Mills and Processing by Rolling; Collection of Articles) Moscow, Mashgiz, 1958. 208 p. (Series: Its; [Trudy] 84) Errata slip inserted. 3,000 copies printed.

Intended for workers of scientific research institutes and plants, teachers, aspirants, and students specializing in the field of rolling mill engineering. 3p., Microfilm $1.80, Photocopy $1.80

BR-SOV/1890
Zabelin, Boris Mikhaylovich
SPETSIALIZATSIYA I KOOPERIROVANIYE V MASHINOSTROYENII SSSR; PO MATERIALAM VAGONOSTROYENIYA I DRUGIKH OTRASLEY (Specialization and Cooperation in the USSR Machine-Building Industry; According to Materials of Car Building and Other Branches) Moscow, Mashgiz, 1958. 146 p. 5,000 copies printed.

Intended for economists working in industrial enterprises and councils for the national economy, and industrial engineers in the machine-building industry. 2p., Microfilm $1.80, Photocopy $1.80

BR-SOV/1898
Yevsikov, Anatoliy Vasil'yevich and Viktor Yakovlevich Popov
TEKHNOLOGIYA PROIZVODSTVA I REMONTA TOPLIVNOY APPARATURY DIZELEY (Methods of Manufacture and Repair of Diesel Engine Fuel Equipment) Moscow, Mashgiz, 1958. 308 p. Errata slip inserted. 5,000 copies printed.

Discusses the process of manufacturing and reconditioning Diesel engine fuel injection pumps, injection nozzles, unit injectors, fuel supply pumps, and filters. 3p., Microfilm $1.80, Photocopy $1.80

BR-SOV/1902
USSR. Gosudarstvennyy Nauchno-tekhnicheskiy komitet.
SPRAVOCHNIK PO PROMYSHLENNYM VZRYVCHATYM MATERIALAM (Handbook on Industrial

Explosives) Moscow, Ugletekhizdat, 1958. 71 p. Errata slip inserted. 20,000 copies printed.

The book is intended for persons working in the mining and building industries and other branches of the national economy. 2p., Microfilm $1.80 Photocopy $1.80

BR-SOV/1908
Stupel', Fayvel' Aronovich
INDUKTIVNYYE I INDUKTSIONNYYE PREOBRAZOVATELI MEKHANICHESKIKH VELICHIN; USTROYSTVO, SKHEMY, RASCHET (Inductance and Induction Transducers of Mechanical Quantities; Construction, Circuits, Calculation) Kharkov, Izd-vo Khar'kovskogo univ., 1958. 102 p. Errata slip inserted. 5,000 copies printed.

The book is intended for students of electrical engineering and for engineers and technicians working in automatic and remote control. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1909
Koroli, O. Ye.
PRYAMOLINEYNOYE KOLEBATEL'NOYE DVIZHENIYE MATERIAL'NOY TOCHKI; PIS'MENNYYE LEKTSII (Rectilinear Vibrational Motion of a Particle; Correspondence Lectures) Leningrad, 1958. 61 p. Errata slip inserted. 1,000 copies printed.

A short presentation of the theory of vibrations, which gives the basic concepts and formulas of free and forced rectilinear vibrational motion of a particle. 2p., Microfilm $1.80, Photocopy $1.80

BR-SOV/1947
Moscow, Vyssheye tekhnicheskoye uchilishche im. N. E. Baumana.
POVYSHENIYE DOLGOVECHNOSTI DETALEY MASHIN; SBORNIK STATEY (Extending the Service Life of Machine Parts; Collection of Articles) Moscow, Mashgiz, 1959. 161 p. (Series: Its: [Trudy] 91) Errata slip inserted. 6,000 copies printed.

Intended for mechanical and metallurgical engineers and technicians. 2p., Microfilm $1.80, Photocopy $1.80

BR-SOV/1962
ELEKTRONNYY AVTOMATICHESKIY POKAZYVAYUSHCHIY I REGULIRUYUSHCHIY MOST S VRASHCHAYUSHCHEYSYA SHKALOY EMV (EMV Automatic Electronic Direct-reading and Regulating Bridge With a Rotating Scale) Moscow /Pishchepromizdat, 1958/ 1 v. (unpaged) [6 p.] 5,000 copies printed.

The instruments described are used in the sugar industry for telemetering the temperature of juice, water, steam, syrup, etc. 1p., Microfilm $1.80, Photocopy $1.80

BR-SOV/1963
Kovrigin, Vladimir Pavlovich, and Viktor Petrovich Chernyshov
TELEVIDENIYE I TELEVIZORY (Television and Television Receivers) /Novosibirsk/ Novosibirskoye knizhnoye izd-vo, 1958. 61 p. 20,000 copies printed.

The book presents in popular form the fundamentals of television and of microwave propagation. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1966
Shvets, Ivan Trofimovich
GAZOTURBINNYYE USTANOVKI (Gas Turbine Installations) Kiyev, AN Ukrainskoy SSR, 1958. 122 p. 8,000 copies printed. Errata slip inserted.

The book covers fundamentals of theory and design of varius types of gas turbines. The historical development of the gas turbine from the beginning of the 20th century is given in brief. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1967
Zinchenko, Nikolay Semenovich
KURS LEKTSIY PO ELEKTRONNOY OPTIKE (Course of Lectures on Electron Optics) Kharkov, Izd-vo Khar'kovskogo univ-ta, 1958. 274 p. Errata slip inserted. 5,000 copies printed.

Intended as a textbook for vuze students specializing in physics and radio engineering. 3p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1970
Serensen, S. V., M. N. Stepnov, V. P. Kogayev, and Ye. V. Giatsintov
ISSLEDOVANIYE RASSEYANIYA KHARAKTERISTIK VYNOSLIVOSTI KONSTRUKTSIONNYKH ALYUMINIYEVYKH SPLAVOV V SVYAZI S TEKHNOLOGIYEY IKH PROIZVODSTVA (Research on the Scattering of Endurance Characteristics of Structural Aluminum Alloys in Connection With Production Technology) Moscow, Oborongiz, 1958. 122 p. 2,600 copies printed (Series: Moscow. Aviatsionyy Tekhnologicheskiy institut. Trudy, vyp. 35)

The book presents methods of fatigue testing to determine the scattering characteristics of fatigue-life indexes of aluminum alloys. 3p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1977
ELEKTRONNYYE AVTOMATICHESKIYE SAMOPISHUSHCHIYE I REGULIRUYUSHCHIYE URAVNOVESHENNYYE MOSTY PEREMENNOGO TOKA EMD (EMD Automatic Electronic Balanced AC

Recording and Regulating Bridges) Moscow Pishchepromizdat 1958 1 v., unpaged 5,000 copies printed.

Describes electronic automatic recording and regulating balanced AC bridges of the EMD type, used for continuously measuring, recording, and regulating the temperature of various media. 1p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1990
Sergeyev, Ivan Ivanovich and Mikhail Valentinovich Shklyarskiy
UCHEBNOYE POSOBIYE ELEKTROMEKHANIKA (A Textbook on Electromechanics) Moscow, Voyen, izd-vo M-va obor. SSSR, 1958. 284 p. No. of copies printed not given.

The book describes the basic sources and converters of electric power employed for supplying radiocommunication and wire-communication equipment. 4p., Microfilm $1.80, Photocopy $1.80

BR-SOV/1992
Gendrikhovskiy, Zdislav Cheslavovich
GORNAYA ELEKTROTEKHNIKA (Electrical Engineering in Mining) Moscow, Ugletekhizdat, 1958. 323 p. Errata slip inserted. 25,000 copies printed.

The book presents information on electric drives, low-voltage and high-voltage mining apparatus and equipment, surface and underground substations and networks, and underground illumination. 5p., Microfilm $1.80, Photocopy $1.80

BR-SOV/1999
Shevchik, Vladimir Nikolayevich
OSNOVY ELEKTRONIKI SVERKHVYSOKIKH CHASTOT (Principles of Superhigh Frequency Electronics) Moscow, Izd-vo "Sovetskoye radio," 1959. 306 p. Errata slip inserted. No. of copies printed not given.

Presents the fundamentals of superhigh-frequency electronics; discusses the theory of modern superhigh-frequency devices; and presents their basic experimental characteristics. 4p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2002
Gurevich, Simon Borisovich
FIZICHESKIYE PROTSESSY V PEREDAYUSHCHIKH TELEVIZIONNYKH TRUBKAKH (Physical Processes in Television Camera Tubes) Moscow, Fizmatgiz, 1958. 300 p. 20,000 copies printed. (Series: Fiziko-matematicheskaya biblioteka inzhenera).

The author discusses the physical processes in television camera tubes with storage of charges. 3p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2005
Yermolayev, Konstantin Pavlovich, and Aleksey Zakharovich Babushkin
ELEKTROMAGNITNYYE I MAGNITNYYE PLITY METALLOREZHUSHCHIKH STANKOV; PROIZVODSTVO, EKSPLUATATSIYA I REMONT (Electromagnetic and Permanent-Magnetic Chucks for Machine Tools; Manufacture, Operation, and Repair) Moscow, Mashgiz, 1959. 106 p. Errata slip inserted. 4,000 copies printed.

This book is intended for engineers, designers, and shop personnel. 2p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2010
Zholdak, Sergey Afanas'yevich, Yakov Yakovlevich Lychagin, and Vitaliy Semenovich Popov
TEKHNOLOGIYA IZGOTOVLENIYA ELEKTROELEMENTOV DLYA ELEKTROAVTOMATICHESKIKH ISTROYSTV (Manufacturing Processes for Electric Elements of Automatic Electric Systems) Moscow, Oborongiz, 1959, 423 p. Errata slip inserted, 6,000 copies printed.

The authors discuss the design problems and manufacturing of electric small-size machines used in automatic electric systems. 4p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2016
D'yakonov, Vasiliy Fomich
MOREKHODNAYA ASTRONOMIYA (Nautical Astronomy) Leningrad, Izd-vo "Morskoy transport," 1958. 462 p. 8,000 copies printed. Errata slip inserted.

This textbook on nautical astronomy is intended for students of navigation at the intermediate level of naval schools. 7p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2029
Indenbaum, V. S., G. I. Mikhalin, and M. A. Sluchayev
MONTAZH ENERGETICHESKOGO OBORUDOVANIYA; KRATKOYE SPRAVOCHNOYE POSOBIYE (Installation of Power Equipment; a Concise Manual) Moscow, Mashgiz, 1959. 419 p. Errata slip inserted. 13,000 copies printed.

This manual is divided into three parts, the first of which deals with the installation of pipelines, the second with turbines and generators, and the third with internal combustion engines used in power stations. 7p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2031
Lyustikh, Yevgeniy Nikolayevich
KRITIKA GEOTEKTONICHESKOY KONTRAKTSIONNOY GIPOTEZY (Criticism of the Geotectonic Contraction Hypothesis) Moscow, AN SSSR, 1958.

44 p. (Series: Akademiya nauk SSSR. Institut fiziki zemli. Trudy, No. 3 [170] 2,000 copies printed.

The author refutes the validity of the contraction theory which contends that all tectonic processes are caused by the contraction of the inner part of the earth's sphere by cooling. 2p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2033
Dubitskiy, Lev Grigor'yevich
RADIOTEKHNICHESKIYE METODY KONTROLYA IZDELIY (Electronic Inspection Methods of Products) Moscow, Mashgiz, 1958. 223 p. 8,000 copies printed.

The book discusses the physical basis for electronic inspection methods using the propagation of electromagnetic waves for inspection purposes. 3p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2035
Ufa. Aviatsionnyy institut
TRUDY, VYP. 2. (Transactions of the Ordzhonikidze Aviation Institute, Ufa) Nr 2. Ufa, Bashkirskoye knizhnoye izd-vo, 1956. 219 p. Errata slip inserted. 1,000 copies printed.

Contains unrelated articles in mechanical, aeronautical (fluid dynamics), metallurgical and other branches of engineering. 4p., Microfilm $1.80
Photocopy $1.80

BR-SOV/2045
Ruditsyn, M. N., P. Ya. Artemov, and M. I. Lyuboshits
SPRAVOCHNOYE POSOBIYE PO SOPROTIVLENIYU MATERIALOV (Handbook on the Strength of Materials) Minsk, Gos. Izd-vo BSSR, 1958.
508 p. Errata slip inserted. 20,000 copies printed.

The handbook is intended for designing and manufacturing departments of machine-building plants and for students of technical schools. 5p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2046
Teodorovich, Georgiy Ivanovich
AUTIGENNYYE MINERALY OSADOCHNYKH POROD (Authigenous Minerals of Sedimentary Rocks) Moscow, Izd-vo AN SSSR, 1958. 224 p.
2,000 copies printed. Errata slip inserted.

This book discusses authigenous sedimentary minerals, methods of identification, and questions on their genesis. 7p., Microfilm $1.80,
Photocopy $1.80

BR-SOV/2047
Gokhberg, Mikhail Mikhaylovich
METALLICHESKIYE KONSTRUKTSII KRANOV; RASCHET S UCHETOM YAVLENIY USTALOSTI (Metal Structures of Cranes; Design, Taking Fatigue Phenomena Into Consideration) Moscow, Mashgiz, 1959. 181 p. Errata slip inserted.
4,000 copies printed.

The book is claimed to be the first attempt to discuss the designing of metal structures for cranes taking fatigue phenomena into account. 3p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2048
Sverdlovsk. Ural'skiy politekhnicheskiy institut imeni S. M. Kirova
TEORIYA I PRAKTIKA LITEYNOGO PROIZVODSTVA (Theory and Practice in the Foundry Industry)
Moscow, Mashgiz, 1959. 231 p. and 32 p.
(Series: Its: [Sbornik] vyp. 89) Errata slip inserted. 5,000 copies printed.

This book is intended for engineering and scientific workers of institutes and machine-building plants, as well as for students of advanced courses at vuzes. 7p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2049
Davydov, Vladimir Ivanovich, and Mikhail Petrovich Maksakov
PROIZVODSTVO GNUTYKH TONKOSTENNYKH PROFILEY METODOM PROFILIROVANIYA NA ROLIKOVYKH STANKAKH (Manufacture of Bent Thin-walled Sections on Roll-forming Machines)
2d ed., rev. and enl. Moscow, Metallurgizdat, 1959. 232 p. 3,500 copies printed.

The authors describe the processes of cold forming thin shapes, constructions of equipment used, and they give examples of tool design. 2p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2052
Krymskiy, Ivan Ivanovich
KUZNECHNO-SHTAMPOVOCHNOYE PROIZVODSTVO V SSSR (Forging and Stamping Industry in the USSR) Moscow, Izd-vo "Znaniye," 1959.
30 p. (Series: Vsesoyuznoye obshchestvo po rasprostaneniyu politicheskikh i nauchnykh znaniy. Seriya IV, 1959, Nr 9) 43,000 copies printed.

The author gives a brief historical survey of the development of the forging industry in Russia, and recent advances are discussed. 2p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2054
Kiselev, Vasiliy Stepanovich, and Lev Mikhaylovich Shcheglov
TOVARY SILIKATNYYE, IZ PLASTICHESKIKH MASS I KHIMIKO-MOSKATEL'NYYE (Silicate and Plastic Articles and Household Chemical Products)
Moscow, Gostorgizdat, 1958. 320 p. Errata slip inserted. 10,000 copies printed.

The book is intended as a textbook for students specializing in silicates. 5p., Microfilm $1.80 Photocopy $1.80

BR-SOV/2055
Meyerzon, Frina Issakovna
PUSK I NALADKA KISLORODNYKH USTANOVOK (Starting and Adjusting Oxygen Installations) Moscow, Metallurgizdat, 1959. 42 p. 3,500 copies printed.

This booklet is intended for master workers and operators of oxygen units of metallurgical and other plants. 2p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2058
Akademiya nauk SSSR. Kompleksnaya yuzhnaya geologicheskaya ekspeditsiya, 1952-1955
GEOLOGIYA I NEFTE-GAZONOSNOST' VOSTOCHNOGO PREDKAVKAZ'YA (Geology and Oil and Gas-bearing Possibilities of the Eastern Part of Predkavkaz'ye [Ciscaucasial]) Leningrad, Gostoptekhizdat, 1958. 621 p. (Series: Its: Trudy, vyp. 1) Errata slip inserted. 2,200 copies printed.

The book is intended for petroleum geologists, exploration geophysicists, and managerial personnel in the oil industry. 5p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2068
Kuperman, L. I.
LENINSKIYE IDEI ELEKTRIFIKATSII V DEYSTVII (Lenin's Ideas on Electrification Are Carried Out) Odessa, 1957. 113 p. No. of copies printed not given.

This booklet describes the progress made in the electrification of the USSR. 2p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2071
Vargin, V. V., Ye. A. Antonova, L. L. Gutorova, Ye. I. Litvinova, V. V. Luchinskiy, Yu. V. Mazurek, V. Ya. Senderovich, and M. V. Serebryakova
TEKHNOLOGIYA EMALI I EMALIROVANIYA METALLOV (Technology of Enamel and Enameling of Metals) Moscow, Gosstroyizdat, 1958. 397 p. Errata slip inserted. 5,000 copies printed.

In this book the physicochemical, mechanical, thermal, optical, chemical, and electrical properties of enamels and enamel coating are described. 5p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2076
Knyazev, Vladimir Sergeyevich, Galina Yur'yevna Fuks-Romanova, and Dumiya Alikperovna Agalarova
MATERIALY PO PETROGRAFII I MIKROPALEONTOLOGII PRODUKTIVNOY TOLSHCHI AZERBAYDZHANA (Materials on the Petrography and Micropaleontology of the Azerbaijan Productive Series) Moscow, Izd-vo AN SSSR, 1958. 102 p. (Series: Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil. Azerbaydzhanskaya neftyanaya ekspeditsiya. Trudy, vyp. 3) (Series: Akademiya nauk Azerbaydzhanskoy SSR) Errata slip inserted. 1,300 copies printed.

The volume is third in a series of publications under the general title "Studies of the Azerbaijan Petroleum Expedition." 2p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2073
Gor'kovskiy avtomobil'nyy zavod imeni Molotova, Gor'kiy
ORGANIZATSIYA I SOVERSHENSTVOVANIYE PROIZVODSTVA; OPYT GOR'KOVSKOGO AVTOZAVODA (Organization and Improvement of Production; Practice at the Gor'kiy Automobile Plant) Moscow, Gospolitizdat, 1958. 332 p. 10,000 copies printed.

The book describes the organization and improvement of the manufacture of automobiles at the Gor'kiy Automobile Plant. 2p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2082
ELEKTROIZOLYATSIONNYYE MATERIALY. CH. 1 1: SVOYSTVA MATERIALOV (Electrical Insulating Materials. Pt. 1: Properties of Materials) Moscow, Gosenergoizdat, 1958. 460 p. (Series: Spravochnik po elektrotekhnicheskim materialam, t. 1) 30,000 copies printed.

A systematically arranged and condensed source of technical data on most of the electrical insulating materials. 8p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2083
Kalachev, Nikolay Stepanovich, Saveliy Yakovlevich Mayzel', Aleksandr Borisovich Reznyakov, and Shafik Chokinovich Chokin
ENERGETIKA KAZAKHSTANA (Power Resources of Kazakhstan) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1958. 222 p. Errata slip inserted. 1,300 copies printed.

This book is intended for engineers, geographers, economists, and other persons interested in the potential and present power resources of the Kazakh Republic. 2p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2090
Fotiadi, Eppominond Eppominondovich
GEOLOGICHESKOYE STROYENIYE RUSSKOY PLATFORMY PO DANNYM REGIONAL'NYKH GEOFIZICHESKIKH ISSLEDOVANIY I OPORNOGO BURENIYA (Geological Structure of the Russian

Platform Based on Regional Geophysical Research and Geological Drilling) Moscow, Gostoptekhizdat, 1958, 243 p. (Series: Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki. Trudy, vyp. 4) 2,000 copies printed.

The book is intended for geologists and geophysicists engaged in the study of the structure of platform formations and in the investigation of new regions containing oil gas. 3p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2093
Kosmachev, Ivan Georgiyevich
TEKHNOLOGIYA IZGOTOVLENIYA BYSTROREZHUSHCHEGO INSTRUMENTA (Technology of Manufacturing High-speed Cutting Tools) [Leningrad] Lenizdat, 1958. 154 p. 5,000 copies printed.

This book reviews the progressive experience of several Leningrad tool and machine-building plants which produce high-speed cutting tools with welded-on, brazed, and inserted tips. 2p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2095
Konferentsiya po voprosam rascheta, konstruirovaniya i issledovaniy zubchatykh peredach i peredach gibkoy svyaz'yu. Odessa, 1957
RASCHET, KONSTRUIROVANIYE I ISSLEDOVANIYE PEREDACH; TRUDY KONFERENTSII, [t.] 1 (Design, Construction and Analysis of Transmissions; Transactions of the Conference on Problems in Design, Construction and Analysis of Gear and Flexible Transmissions, Vol 1) [Odessa] Odesskiy politekh in-t, 1958. 199 p. 5,000 copies printed.

This first of three volumes contains articles on the design and construction of gearings and worm gearings. 4p., Microfilm $1.80,
Photocopy $1.80

BR-SOV/2096
Popov, Vladimir Dmitriyevich
TEPLOVYY ROZRAKHUNOK UTFEL'NYKH VAKUUM-APARATIV; FIZYCHNI OSNOVY I METODYKA. (Heat Calculation of Massecuite Vacuum Pans; Physical Fundamentals and Methods) Kiyev, Derzhtekhvydav, 1958. 326 p. 1,000 copies printed.

The author describes results of numerous plant and laboratory experiments dealing with heat transfer and crystallization processes during the boiling of massecuite. 3p., Microfilm $1.80,
Photocopy $1.80

BR-SOV/2099
Mukhlenov, Ivan Petrovich
TEKHNOLOGIYA VAZHNEYSHIKH OTRASLEY PROMYSHLENNOSTI, CHAST' III: KHIMICHESKAYA PROMYSHLENNOST' (Technology of the Major Branches of Industry, Pt. 3: Chemical Industry) Moscow, Izd-vo VPSh i AON pri TsK KPSS, 1958. 177 p. 25,000 copies printed.

A brief description is given of chemical industries of major importance to the national economy. 3p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2100
Musyakov, Leonid Abramovich, Girsh Solomonovich Vil'ner, and Anatoliy Vasil'yevich Yastrebov
AVTOMATIZATSIYA KAK SREDSTVO OZDOROVLENIYA USLOVIY TRUDA (Improved Working Conditions Through Automation) [Moscow] Profizdat, 1958. 71 p. 5,000 copies printed.

The booklet describes simple mechanization and automatization methods, that may significantly reduce working hazards in casting, cutting, and forming metals and processing chemicals. 1p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2102
Zubanov, Mikhail Prokof'yevich
VIBRATSIONNYYE MASHINY DLYA UPLOTNENIYA BETONNYKH SMESEY I GRUNTA (Vibratory Machines for Compacting Concrete Mixes and Soil) Moscow, Mashgiz, 1959. 218 p. Errata slip inserted. 2,000 copies printed.

The book presents the elements of the theory of compaction by vibratory machines. 3p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2104
Omarovskiy, Aleksandr Grigor'yevich
SPETSIALIZATSIYA PROIZVODSTVA I RAZMESHCHENIYE MASHINOSTROITEL'NOY PROMYSHLENNOSTI SSSR (Production Specialization and Territorial Distribution of the Machine Building Industry in the USSR) Moscow, Mashgiz, 1959. 178 p. 3,500 copies printed.

This book is intended for plant managers and economists, personnel of planning organizations, and instructors in economic vuzes. 2p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2105
Podkolzin, Pavel Semenovich and Petr Zinov'yevich Pinsker
HIRNYCHA PROMYSLOVIST' UKRAINY; VYDOBUTOK VUHILLYA RUDY I NAFTY, 1917-1957 (Mining Industry of the Ukraine; Coal, Ore, and Oil Production from 1917-1957) Kiyev, Derzh. vyd-vo tekhn. lit-ry URSR, 1957. 108 p. 3,000 copies printed.

This book is intended for the general reader interested in the development of the mining industry in the Ukraine. 2p., Microfilm $1.80
Photocopy $1.80

BR-SOV/2107
Zamkovskiy, V. R., and V. Ye. Svets
PODGOTOVKA METALLA K PROKATKE I OTDELKA PROKATA; OBOBSHCHENIYE PEREDOVOGO OPYTA (Preparing Metal for Rolling and Finishing Rolled Products; General Conclusions From Progressive Experiments) Khar'kov, Metallurgizdat, 1958. 279 p. 2,600 copies printed.

Practices of Soviet plants in preparing metal for rolling and in finishing rolled products are presented. These two phases are admittedly the weakest link in production of rolled stock. 3p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2112
Tsentral'nyy institut prognozov
VOPROSY SEL'SKOKHOZYAYSTVENNOY METEOROLOGII (Problems in Agricultural Meteorology) Leningrad, Gidrometeoizdat, 1958. 121 p. (Series: Its: Trudy, vyp. 72) Errata slip inserted for vyp. 53, 1957. 1,200 copies printed.

This collection of articles discusses various aspects of agrometeorology, namely the effect of climatological conditions on various crops. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2113
Tsentral'nyy institut prognozov
VOPROSY MORSKIKH GIDROMETEOROLOGICHESKIKH PROGNOZOV (Problems of Marine Hydrometeorological Forecasting) Moscow, Gidrometeoizdat (otd-niye), 1958. 88 p. Errata slip inserted. (Series: Its: Trudy, vyp. 76) 1,000 copies printed.

This collection of articles deals with the problem of forecasting the onset of seasonal ice phenomena. 2p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2114
Tsentral'nyy institut prognozov
VOPROSY SINOPTICHESKOY I DINAMICHESKOY METEOROLOGII (Problems of Synoptic and Dynamic Meteorology) Moscow, Gidremeteoizdat (Otd-niye), 1958. 110 p. (Series: Its: Trudy, vyp. 77) 1,100 copies printed.

This collection of articles deals with various aspects of atmospheric circulation. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2115
Tsentral'nyy institut prognozov
VOPROSY DINAMICHESKOY METEOROLOGII (Problems of Dynamic Meteorology) Moscow, Gidrometeoizdat (Otd-niye), 1958. 110 p. (Series: Its: Trudy, vyp. 78) 1,300 copies printed.

These articles deal with hydrodynamic methods of a shortrange forecasting of meteorologic elements, the theory of climate, and questions of general atmospheric circulation. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2117
Soveshchaniye po eksperimental'noy tekhnike i methodam vysokotemperaturnykh issledovaniy, 1956.
EKSPERIMENTAL'NAYA TEKHNIKA I METODY ISSLEDOVANIY PRI VYSOKIKH TEMPERATURAKH; TRUDY SOVESHCHANIYA (Experimental Techniques and Methods of Investigation at High Temperatures; Transactions of the Conference on Experimental Techniques and Methods of Investigation at High Temperatures) Moscow, AN SSSR, 1959. 789 p. (Series: Akademiya nauk SSSR. Institut metallurgii. Komissiya po fizikokhimicheskim osnovam proizvodstva stali) 2,200 copies printed.

This book is intended for metallurgists and metallurgical engineers. 16p., Microfilm $2.40 Photocopy $3.30

BR-SOV/2118
Gavrilov, A. N., P. I. Kovalev, B. A. Khokhlov, and N. F. Zherdev
AL'BOM PRISPOSOBLENIY DLYA METALLOREZHUSHCHIKH STANKOV, PRIMENYAYEMYKH V PRIBOROSTROYENII (Album of Fixtures for Metal-Cutting Tools Used in the Instrument-Making Industry) Moscow, Mashgiz, 1958. 166 p. 5,000 copies printed.

This album is intended to facilitate the work of creating better machine-tool fixtures. There are 180 drawings of the more common and characteristic fixtures from some twenty instrument-making plants. 3p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2125
Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Institut Metallovedeniya i fiziki metallov
PROBLEMY METALLOVEDENIYA I FIZIKI METALLOV (Problems in Physical Metallurgy and Metallophysics) Moscow, Metallurgizdat, 1959. 540 p. (Series: Its: Sbornik trudov, 6) Errata slip inserted. 3,600 copies printed.

The papers in this collection present the results of investigations conducted between 1954 and 1956. 9p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2128
Kreyter, V. M., V. V. Aristov, I. S. Volynskiy, A. N. Krestovnikov, and V. V. Kuvichinskiy
PROVEDENIYE ZOLOTA V ZONE OKISLENIYA ZOLOTO-SUL'FIDNYKH MESTOROZHDENIY (Behavior of Gold in the Oxidation Zone of Gold-Sulfide Deposits) Moscow, Gosgeoltekhizdat, 1958. 266 p. 3,000 copies printed.

The work attempts to create a practical basis for appraising the importance of primary and secondary

ore zones containing gold deposits resulting from hypergenetic migration. 2p., Microfilm $1.80 Photocopy $1.80

BR-SOV/2130
Melent'yev, L. A., and Ye. O. Shteyngauz
EKONOMIKA ENERGETIKI SSSR (Power Economics of the U.S.S.R.) Moscow, Gosenergoizdat, 1959. 395 p. Errata slip inserted. 4,600 copies printed.

The book describes and analyzes every phase and function of the planning, organizing, and cost estimating of power generation in the USSR. 6p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2131
Akademiya nauk SSSR. Morskoy Gidrofizicheskiy institut
TERMIKA MORYA. KHIMIYA MORYA (Thermal Regime of the Sea. Chemistry of the Sea) Moscow, AN SSSR, 1958. 145 p. (Series: Its: Trudy, tom 13) Errata slip inserted. 1,300 copies printed.

This collection of articles is intended for geophysicists, hydrophysicists, and oceanographers. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2133
Dolukhanova, Nina Ivanovna
OPYT PRIMENENIYA GIDROKHIMICHESKOY S"YEMKI NA MEDNO-MOLIBDENOVYKH MESTOROZHDENIYAKH ARMYANSKOY SSR (Case History of a Hydrochemical Survey of Copper and Molybdenum Deposits in the Armenian SSR) Yerevan, Izd-vo AN Armyanskoy SSR, 1958. 88 p. Errata slip inserted. 1,000 copies printed.

This book reports on the results of the first systematic study of Armenia based on the chemical analysis of the waters present in ore deposits. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2139
Kozlov, Anatoliy L'vovich
O ZAKONOMERNOSTYAKH FORMIROVANIYA I RAZMESHCHENIYA NEFTYANYKH I GAZOVYKH ZALEZHEY (Formation and Distribution of Oil and Gas Deposits) Moscow, Gostoptekhizdat, 1959. 161 p. Errata slip inserted. 2,500 copies printed.

The book describes the distribution of oil and gas deposits, not only according to rock profile, but also according to the entire extent of gas and oil basins. 2p., Microfilm $1.80, Photocopy $1.80

BR-SOV/2140
Kireyev, Valentin Aleksandrovich
KRATKIY KURS FIZICHESKOY KHIMII (A Short Course in Physical Chemistry) Moscow, Goskhimizdat, 1959. 599 p. Errata slip inserted. 25,000 copies printed.

The book is intended to serve as a textbook for vtuz students not specializing in chemistry. 9p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2152
Moscow, Institut inzhenerov geodezii. aerofotos"yemki i kartografii
TRUDY, VYP. 33 (Transactions of the Moscow Institute of Engineering Geodesy, Aerial Photography, and Cartography, Nr 33) Moscow, Geodezizdat, 1958. 123 p. 1,000 copies printed.

This collection of articles covers a variety of problems and questions of interest to personnel in the mapping field. 2p., Microfilm $1.80 Photocopy $1.80

BR-SOV/2159
Patskevich, Ivan Romanovich
VIBRODUGOVAYA NAPLAVKA (Surfacing by Vibro-arc Welding) Moscow, Mashgiz, 1958. 118 p. Errata slip inserted. 6,500 copies printed.

The author describes investigations and experiments relating to a progressive method of hard surfacing by vibro-arc welding, developed in 1951-1952 by G.P. Klekovkin. 3p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2168
Gavrilov, Valentin Aleksandrovich
PROZRACHNOST' ATMOSFERY I VIDIMOST' (Atmospheric Transparency and Visibility) 2nd ed., rev. and enl. Leningrad, Gidrometeoizdat, 1958. 166 p. 8,000 copies printed.

This book discusses visibility as influenced by the inter-related properties of atmosphere, visual functions of the viewer, and the nature of the object to be viewed. 3p., Microfilm $1.80 Photocopy $1.80

BR-SOV/2169
Frank-Kamenetskiy, David Al'bertovich
OBRAZOVANIYE KHIMICHESKIKH ELEMENTOV V NEDRAKH ZVEZD (Formation of Chemical Elements Inside Stars) Moscow, Izd-vo "Znaniye", 1959. 30 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IX, 1959, no. 10) 36,000 copies printed.

The booklet is intended for the general reader interested in the physical sciences. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2170
Akademiya nauk Ukrainskoy SSR. Institut metallokermiki i spetsial'nykh splavov
VOPROSY POROSHKOVOY METALLURGII I PROCHNOSTI MATERIALOV, VYP. 5 (Problems in Powder Metallurgy and Strength of Materials, Nr 5) Kiyev, Izd-vo AN USSR, 1958. 172 p. 2,000 copies printed.

The physical and chemical properties of materials used in powder metallurgy are discussed. 3p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2180
Lange, Oktariy Konstantinvich
OBSHCHAYA GEOLOGIYA (General Geology) Moscow, Gosgeoltekhizdat, 1958. 250 p. Errata slip inserted. 10,000 copies printed.

This textbook on geology is intended for students at geologic-exploration tekhnikums. 2p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2181
Vrashev, Sergey Pavlovich, Aleksandr L'vovich Letnik, and Daniil Moiseyevich Shifrin
MASHINOVEDENIYE (Science of Mechanical Engineering) Moscow, Mashgiz, 1956. 463 p. 80,001-155,000 copies printed.

The book presnets basic information on hydraulics, engineering thermodynamics, and the theory of heat transfer. 9p., Microfilm $1.80
Photocopy $1.80

BR-SOV/2191
Kolodtsev, Kh. I., and B. D. Katsnel'son
ISPOL'ZOVANIYE TVERDOGO TOPLIVA V GAZOTURBINNYKH USTANOVKAKH (Use of Solid Fuel in Gas-Turbines) Moscow, 1958. 85 p. (Series: Energeticheskaya promyshlennost') Errata slip inserted. 3,000 copies printed.

This book is intended for engineers and students investigating the use of solid fuels in stationary gas-turbine units, its gasification and combustion under different operating conditions. 2p.
Microfilm $1.80, Photocopy $1.80

BR-SOV/2205
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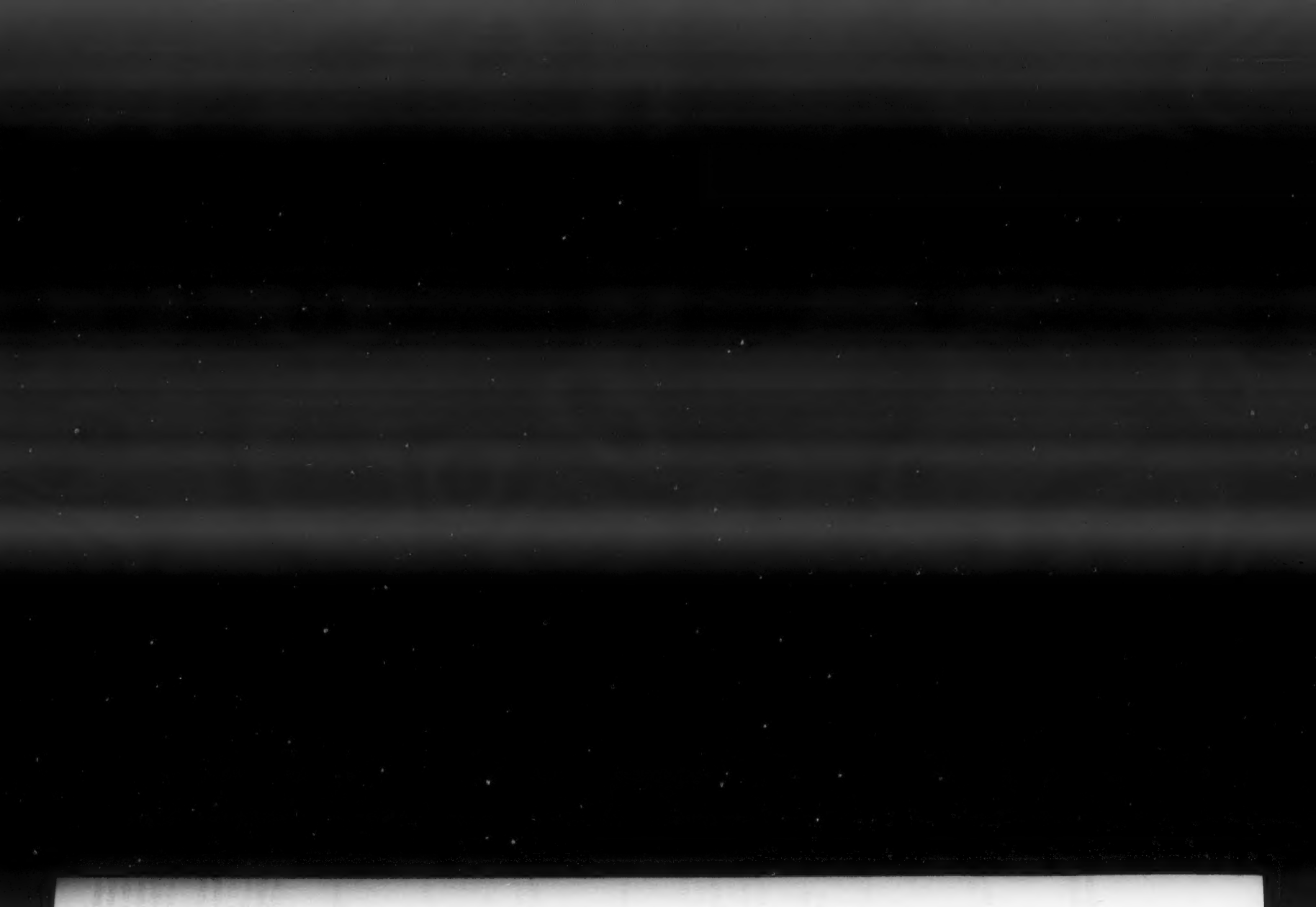

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JPRS(NY)-1876 (59-13861)	683
JPRS(NY)-1880 (59-13864)	682
JPRS(NY)-1884 (59-13867)	688
JPRS(NY)-1889 (59-13874)	692
JPRS(NY)-1890 (59-13876)	689
JPRS(NY)-1899 (59-13891)	681
JPRS(NY)-L-674 (59-13253)	690
JPRS(NY)-L-932 (59-13825)	685
JPRS(NY)-L-933 (59-13826)	685
JPRS(NY)-L-937 (59-13831)	714
JPRS(NY)-L-944 (59-13834)	689
JPRS(NY)-L-949 (59-13838)	685
JPRS(NY)-L-950 (59-13839)	684
JPRS(NY)-L-953 (59-13842)	684
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JPRS(NY)-L-958 (59-13850)	707
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PA Trans-50 (59-19242)	704
RTP Trans-2380 (59-17671)	705
RTP Trans-2382 (59-17675)	726
RTP Trans-2388 (59-17717)	737
RTP Trans-2389 (59-17718)	737
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RTP Trans-2419 (59-17685)	700
RTP Trans-2421 (59-17679)	713
RTP Trans-2429 (59-17687)	726
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